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ABSTRACT

This selective bibliography provides annotated references for 1,200 books and articles published between 1976 and 1978 which concern productivity--the relation between physical output and input. Publications deal with concepts and methods; measurement of levels and trends; the sources of productivity change (such as technology and research); the relation of productivity to economic variables such as wages, prices, and employment; and economic growth. Major sources drawn upon were the United States Department of Labor Library accessions lists, Journal of Economic Literature, and Dissertation Abstracts International--Humanities and Social Sciences. The annotated listing is divided into (1) concepts and measurement; (2) measures (total economy and private sectors, industries, public sector, international); (3) factors affecting productivity change (work force characteristics; hours and work schedules; capital; technological change; research and development/innovation; management and other organizational factors; energy, economies of scale, and other factors); (4) productivity, prices, and costs; (5) productivity and employment; (6) productivity and economic growth; and (7) bibliographies, annual reports, etc. Each citation contains the following: author, title, place of publication and publisher or source of article, number of pages or page numbers, and brief annotation. Author and subject indexes are provided. (YLB)

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Productivity: A Selected, Annotated Bibliography, 1976-78

U.S. Department of Labor
Ray Marshall, Secretary
Bureau of Labor Statistics
Janet L. Norwood, Commissioner
April 1980

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U.S. DEPARTMENT OF HEALTH,
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Preface

Productivity—the relation between physical output and input—has been studied for many years in the Bureau of Labor Statistics (BLS). Such studies and research are conducted in the Bureau's Office of Productivity and Technology. The interest in productivity derives from a number of concerns—the pace of technological change and its effects on employment and skills; the trend in prices and costs; and the rate at which additional goods and services become available. Thus, the study of productivity is essential in understanding the factors giving rise to variations in income and wealth, and in determining economic policy.

This bibliography, the fifth in a series, is intended to facilitate such study. It covers a large selection of books and articles that were published between 1976 and 1978. It provides annotated references for 1,200 publications dealing with concepts and methods; measurement of levels and trends; the sources of productivity change (such as technology and research); the relation of productivity to economic variables such as wages, prices, and employment; and economic growth. Many studies published in 1975 are included in this bibliography; they had not become available in time for inclusion in the previous one. Earlier BLS bibliographies on productivity include Bulletin 1226 (1958), Bulletin 1514 (1966), Bulletin 1776 (1971), and Bulletin 1933 (1977).

Major sources drawn upon were the U.S. Department of Labor Library accession lists; the *Journal of Economic Literature;* and *Dissertation Abstracts International—Humanities and Social Sciences,* published by Xerox University Microfilm, Ann Arbor, Michigan.

The bibliography was compiled by Horst Brand and Harvey A. Belitsky, under the direction of Charles Ardolini, Chief, Division of Industry Productivity Studies.

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Annotated Listing

Concepts and measurement

1.1 Afriat, S.N. *The Price Index.* London, Cambridge University Press, 1977. 187 pp.

Deals with the index number problem, the general problem of limits, and the Laspeyres and Paasche indexes as well as the Fisher index.

1.2 Agarwal, M., Askari, H., and Corson, W. "A Testing of the Ricardian Theory of Comparative Advantage." *Economia Internazionale,* Vol. 28, No. 3–4, August-November 1975, pp. 341-52.

The authors contend that investigators have used a very narrow definition of productivity in the empirical testing of the Ricardian theory of comparative advantage. They present their own concepts of labor productivity.

1.3 Allen, R.I.G., and Gossling, W.F., eds. *Estimating and Projecting Input-Output Coefficients.* London, Input-Output, 1975. 104 pp.

The contributors deal with improvements in the Leontief model to achieve more accurate projections of interindustry relations.

1.4 Altmann, Franz-Lothar, and others. *On the Measurement of Factor Productivities: Theoretical Problems and Empirical Results.* Goettingen, Vandenhoeck & Ruprecht, 1976. 605 pp.

A collection of papers dealing with concepts, techniques, and problems of productivity measurement. They present comparative and country studies.

1.5 Ammann, Alan I. *A Re-Examination of the Leontief Paradox and the U.S. Import-Export Position.* Doctoral dissertation presented to Mississippi State University, 1978. 159 pp.

Argues that Leontief's data and assumptions, correct for 1947, are incorrect for 1976. Also asserts that Leontief's two-factor model is inadequate, that 1947 was an unrepresentative year, that identical production technologies were premised for a number of countries, and that the combination of physical and human capital in one capital figure is unsound.

1.6 Archibald, R.B. "On the Theory of Industrial Price Measurement: Output Price Indexes." *Annals of Economic and Social Measurement,* Vol. 6, No. 1, Winter 1977, pp. 57–72.

Proposes two output price indexes which include the effects of substitution caused by price changes. Discusses the properties of these indexes.

1.7 Balk, Walter L., and Shafritz, Jay M. *Public Utility Productivity Management and Measurement.* A Symposium sponsored by the New York State Department of Public Service and the State University of New York at Albany, August 1975. Albany, The New York State Department of Public Service. 256 pp.

The contributors discuss, for electric utilities, aggregate measures of productivity, including performance indicators; data requirements; managerial efficiency; and applications of productivity measurement.

1.8 Barlow, R. "A Test of Alternative Methods of Making GNP Comparisons." *Economic Journal,* Vol. 87, No. 347, September 1977, pp. 450-59.

Describes four methods for estimating a nation's gross national product in dollars. Concludes from data for 41 countries that the adjusted-exchange-rate and physical-indicator methods are equally good for approximating the repricing estimate, which is conceptually superior.

1.9 Barna, T. "Quesnay's Model of Economic Development." *European Economic Review,* Vol. 8, No. 4, December 1976, pp. 315-38.

Examines Quesnay's ideas on growth and technical progress in agriculture. Formalizes these ideas in a dynamic model.

1.10 Bendick, Marc, Jr., *Essays on Education as a Three-Sector Industry.* Doctoral dissertation presented to The University of Wisconsin-Madison, 1975. 270 pp.

Discusses industry measurement, sectoral product differentiation, and sectoral market shares in a framework of industrial organization theory.

1.11 Bezdek, R.H., and Dunham, C.R. "Changes in Industry Product Mix as a Cause of Intertemporal Instability in Input-Output Coefficients." *Quarterly Review of Economics and Business,* Vol. 16, No. 1, Spring 1976, pp. 61-76.

The authors discuss the theoretical context within which changes in product mix can be divorced from technological change and other factors. They estimate the degree of product-mix change within input-output industries between 1958 and 1963. They find little causal relationship between changes in product mix and changes in interindustry coefficients.

1.12 Blin, J.M., and Cohen, C. "Technological Similarity and Aggregation in Input-Output Systems: A Cluster-Analytic Approach." *Review of Economics and Statistics,* Vol. 59, No. 1, February 1977, pp. 82-91.

The authors develop a general methodology for industry identification in input-output systems and define technological similarity across industries. They analyze empirical results for the 1967 U.S. input-output table; apply the method to a Leontief approach; and discuss implications for testing certain hypotheses in economic history and development theory.

1.13 Bodkin, Ronald G., and Tanny, Stephen M., eds. *CANDIDE Project Paper, No. 18: CANDIDE Model 1.1.* Vols. I and II. Ottawa, Economic Council of Canada, 1975. 317 pp; 25[illegible] pp.

Volume I provides an overview of a widely used medium-term model of the Canadian economy. The authors discuss each of the model's twenty-five sectors and the principal linkages between them. Volume II documents the model variables, specifications, and estimation results.

1.14 Brown, Alan A.; Licari, Joseph A.; and Neuberger, Egon. "Productivity Measurement in Socialist Economies Using Divisia Indexes and Adjusted Factor Shares." *Southern Economic Journal,* Vol. 42, No. 3, January 1976, pp. 482-85.

The authors present a method that partially removes price distortions from socialist statistics and discuss the implications for measuring total factor productivity by Divisia indexes.

1.15 Chereb, David Michael. *Endogenous Technological Change.* Doctoral dissertation submitted to the University of Southern California, 1977. No. pp. listed.

Formulates a growth model using quality augmenting variables. Includes, for labor, research and development (R&D), learning by doing, and education; for capital, R&D. Constructs pertinent indexes for 2-digit manufacturing industries, utilizing the Divisia indexing approach.

1.16 Chatfield, Christopher. *The Analysis of Time Series.* New York, Wiley, 1975. 263 pp.

To help students and research workers analyze data, the author presents examples of time series and of graphing them; alternative probability models; and various forecasting procedures, including econometric models.

1.17 Christensen, Laurits R. "Concepts and Measurement of Agricultural Productivity." *American Journal of Agricultural Economics,* Vol. 57, No. 5, December 1975, pp. 910-15.

Argues that the U.S. Department of Agriculture should switch from the use of Laspeyres indexes for total output and total input. Favors development of a superlative index number procedure which can approach the basic production process and capture quality variation.

1.18 Cormier, Gerald H., and Early, John. "Updating the Weights in Indexes of Wholesale, Industry Prices." *Monthly Labor Review,* Vol. 99, No. 9, September 1976, pp. 19-25.

The authors discuss weight adjustments and their purpose and scope, together with shifts in the relative importance of major industry groups. They also deal with effects on stage-of-processing indexes.

1.19 Creamer, Daniel, and others. *Gross National Product Data Improvement Project Report.* Report of the Advisory Committee on Gross National Product Data Improvement, October 1977. Issued by the Office of Federal Statistical Policy and Standards, U.S. Department of Commerce. Washington, U.S. Government Printing Office. 204 pp.

The authors discuss improvements in such areas as 5-year benchmark estimates, nonbenchmark estimates, price needs for constant-price accounts, flow of funds, and the rest-of-the-world account.

1.20 Csepinszky, A., ed. *Input-Output Techniques: Proceedings of the Second Hungarian Conference on Input-Output Techniques.* Budapest, The Hungarian Academy of Sciences, Académiai Kiadó, 1976, 408 pp.

A collection of papers dealing with statistical problems, table construction, mathematical problems, and the application of input-output data to planning and economic analysis.

1.21 Denison, Edward F. "Effects of Selected Changes in the Institutional and Human Environment Upon Output per Unit of Input." *Survey of Current Business,* Vol. 58, No. 1, January 1978, pp. 21-44.

Discusses costs incurred to protect the physical environment, together with estimation procedures and derivation of the estimates; costs incurred to protect health and safety of workers; and costs of dishonesty and crime. Discusses the combined effects.

1.22 Dorenfeld, David Lynn. *Growth Fluctuations in Planned Economies. A Theoretical and Econometric Analysis.* Doctoral dissertation presented to The University of Michigan, 1977. 279 pp.

Argues that newly produced capital goods are not directly proportional to output, taking time to be absorbed in the productive process. Develops a theory of capital gestation, from which he deduces cyclical fluctuations in the growth rates of planned economies.

1.23 Eichhorn, Wolfgang, and Voeller, Joachim. *Theory of the Price Index: Fisher's Test Approach and Generalizations.* Berlin, Springer-Verlag, 1977. 95 pp.

The authors suggest sets of properties for indexes, and investigate the consistency of the sets. They generally find inconsistencies for the Fisher tests.

1.24 Eichner, Alfred S., and Kregel, J.A. "An Essay on Post-Keynesian Theory: A New Paradigm in Economics." *Journal of Economic Literature,* Vol. 13, No. 4, December 1975, pp. 1293-1314.

The authors distinguish four topics: growth dynamics, distributional effects, the Keynesian constraints, and microeconomic base.

1.25 Eilon, Samuel; Gold, Bela; and Soesan, Judith. *Applied Productivity Analysis for Industry.* Oxford, Pergamon Press, 1976. 51 pp.

The authors define productivity and explain concepts and measurement. They describe applications in steel processing and chemical manufacturing and discuss some implications for planning.

1.26 Fenoaltea, Stefano. "Real Value Added and the Measurement of Industrial Production." *Annals of Economic and Social Measurement,* Vol. 5, No. 1, Winter 1976, pp. 111-37.

Considers measures of production that permit direct comparisons across time and industries. Argues that real value added should measure the value of production by an unchanging standard, and should therefore reflect relative prices as well as quantities. Discusses the "ideal form" of the value-added deflator.

1.27 FitzGerald, Edmund V. *Public Sector Investment Planning for Developing Countries.* New York, Holmes & Meier, 1978, 200 pp.

Discuss social cost-benefit analysis, focusing on project impact upon national objectives such as income redistribution and autonomous industrialization.

1.28 Fogel, Robert W., and Engerman, Stanley L. "Explaining the Relative Efficiency of Slave Agriculture in the Antebellum South." *American Economic Review,* Vol. 67, No. 3, June 1977, pp. 275-96.

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The authors derive a "residual" measure of efficiency limited to measurement errors due to imperfections in underlying data, methods of aggregation, or other mismeasurements not bearing on the operation of the slave system. They then identify the specific features of slavery which account for individual parts of the residual's aggregate value.

1.29 Forrester, Jay W. "Changing Economic Patterns." *Technology Review*, Vol. 80, No. 8, August/September 1978, pp. 46-53.

Argues that economic activity expands and contracts in long waves. Describes computer simulation of economic behavior. Finds that capital investment fluctuations account for long cycles and that current economic conditions and their antecedents confirm the existence of such cycles.

1.30 Fujino, Shozaburo. *A Neo-Keynesian Theory of Income, Prices and Economic Growth.* Economic Research Series No. 15, Tokyo, Kinokuniya Bookstore Co., 1975. 206 pp.

Considers cyclical variation, inflation, and economic growth. Combines macro and micro economic approaches and relates short-run to long-run analysis of the economy.

1.31 Gehman, Clayton. "Industrial Production—1976 Revision." *Federal Reserve Bulletin*, Vol. 62, No. 6, June 1976, pp. 470-79.

Discusses principal improvements in the production measures for oil and gas extraction and refining, electric and gas utilities, and industries that produce chemicals, construction products, and motor vehicles. Holds that the revised data suggest greater expansion in plant capacity and output per unit of energy and of labor in recent years than shown by the earlier index.

1.32 Ghosh, D.; Lees, D.; and Seal, W. "Optimal Motorway Speed and Some Valuations of Time and Life." *Manchester School of Economics and Social Studies*, Vol. 43, No. 2, June 1975, pp. 134-43.

The authors analyze the relationship between speed, accidents, and gasoline consumption to reveal tradeoffs made by individuals and governments in their choice of speeds and speed limits. They use a production function approach to accident causation.

1.33 Gossling, W.F., ed. *Input-Output and Throughput: Proceedings of the 1971 Norwich Conference.* London, Input-Output, 1975. 142 pp.

A collection of essays considering applications of the input-output technique, giving special stress to the time dimension.

1.34 Heilbroner, Robert, and Thurow, Lester C. *The Economic Problem.* 5th ed. Englewood Cliffs, N.J., Prentice-Hall, 1978. 724 pp.

A wide-ranging text dealing with economic institutions, economic reasoning, the market system, the business cycle, international aspects, and quantitative methods.

1.35 Hill, T.P. "On Goods and Services." *Review of Income and Wealth*, Series 23, No. 4, December 1977, pp. 315-38.

Discusses concepts, definitions, and measurement of services. Argues their distinctiveness from goods, as well as their quantifiability, without which they could not be priced. Examines also the distinctions between private and public goods and private and collective services.

1.36 Hirsch, S. "The Product Cycle Model of International Trade—A Multi-Country Cross-Section Analysis." *Oxford Bulletin of Economics and Statistics*, Vol. 37, No. 4, November 1975, pp. 305-17.

Finds that skill intensity explains international trade patterns better than physical-capital intensity. Argues that physical and human capital be treated separately for analytical purposes.

1.37 Humphries, Jane. "Causes of Growth." *Economic Development and Cultural Change.* Vol. 24, No. 2, January 1976, pp. 339-53.

Argues the superior capability of her model for combining factors such as education, inflation, and aid to explain different growth rates.

1.38 International Labour Office. *International Recommendations on Labour Statistics.* Geneva, 1976, 131 pp.

Presents main recommendations and guidelines relating to current statistical methodology.

1.39 Jones, Hywel G. *An Introduction to Modern Theories of Economic Growth*. New York, McGraw-Hill, 1975. 250 pp.

Presents the basic received models of growth. Analyzes the Cambridge controversy, ideas on technical progress and their integration in growth models, and the concept of optimal growth.

1.40 Juster, Thomas F. "Alternatives to GNP as a Measure of Economic Progress." In *U.S. Economic Growth from 1976 to 1986: Prospects, Problems, and Patterns*. Vol. 10, *The Quality of Economic Growth*. Studies Prepared for the Use of the Joint Economic Committee, U.S. Congress, May 20, 1977. Washington, U.S. Government Printing Office, pp. 12-24.

Discusses the measurement of economic growth, the relation of economic welfare to gross national product, and "subjective" welfare.

1.41 Kantorovich, L.V. *Essays in Optimal Planning*. White Plains, N.Y., International Arts and Sciences Press, 1976, 251 pp.

Presents essays discussing such subjects as long-run programming of economic activity, growth models, optimal planning, determination of the growth rate of national income, and the normative efficiency of investment in a centrally planned economy. Also reviews Soviet price formation.

1.42 Kendrick, John W., and others. *National Wealth of the United States. By Major Sector and Industry*. New York, The Conference Board, March 1976. 81 pp.

Presents estimates of wealth in capital goods and natural resources (i.e., structures, equipment, land, and inventories). Breaks down aggregates by major sector and industry.

1.43 Kendrick, John W. *Understanding Productivity. An Introduction to the Dynamics of Productivity Change*. Baltimore, Johns Hopkins Press, 1977. 141 pp.

Deals with concepts, measurement, and analysis. Describes national and sectoral trends and discusses causal factors and the relation of productivity to costs and prices.

1.44 Khaled, Mohammed S. *Productivity Analysis and Functional Specification. A Parametric Approach*. Doctoral dissertation presented to Stanford University, 1978. 271 pp.

Analyzes productivity in terms of price effects, non-neutral scale effects, and biased technical change. Uses total factor productivity as an index of technical change. Develops a characterization of U.S. manufacturing technology.

1.45 Klein, Philip A. *Business Cycles in the Postwar World: Some Reflections on Recent Research*. Washington, American Enterprise Institute for Public Policy Research, 1976. 51 pp.

Explores procedures used to identify classical business cycles. Holds that growth cycles are best examined as a modern expression of the process that produced past business cycles.

1.46 Kmenta, Jan. *On the Problem of Missing Measurements in the Estimation of Economic Relationships*. Ann Arbor, University of Michigan, 1977. 31 pp.

Basing his study upon models of classical multiple regressions, generalized regression, and recursive systems, the author examines the possibility of extracting information from observations with missing measurements and analyzes suitable methods of investigation.

1.47 Kohn, Robert E. *Air Pollution Control: A Welfare Economic Interpretation*. Lexington, Mass., Heath, 1975. 155 pp.

Defines the conditions for an efficient allocation of inputs and outputs when production activities produce external diseconomies in the form of pollution.

1.48 Koopmans, Tjalling C. "Concepts of Optimality and Their Uses." *American Economic Review*, Vol 67, No. 3, June 1977, pp. 261-74.

Discusses the range of applications of the idea of best use of scarce resources. Deals with the production program of individual plants or enterprises, the history of pertinent analyses and their chief exponents, and the theory of optimal economic growth.

1.49 Laibman, David. "Toward a Marxian Model of Economic Growth." *American Economic Review*, Vol. 67, No.1, February 1977, pp. 387-92.

Compares Marxian, Marshallian, and post-Keynesian models of growth, arguing that an adequate conception of technical change in capitalist production can impart greater validity to all of them. Deals with certain indeterminacies of Marxian economics, particularly those pertaining to the "organic composition" of capital.

1.50 Lancaster, Kelvin. "The Measurement of Changes in Quality." *The Review of Income and Wealth*, Series 23, No. 2, June 1977, pp. 157-72.

Deals with theoretical problems of devising indexes of quality change, and with practical problems of deriving them from market data. Discusses earlier attempts.

1.51 Lecomber, Richard. *Economic Growth Versus the Environment*. New York, Wiley, 1975, 96 pp.

Discusses the inadequacies of gross national product as an index of welfare, and examines two attempts to construct a more satisfactory measure.

1.52 Leontief, Wassily. *Essays in Economics: Theories, Facts, and Policies*. Vol. 2. White Plains, N.Y., M.E. Sharpe, 1977. 161 pp.

Discusses such topics as national accounts, measurement of industrial concentration, input-output analysis, national economic planning, and factor costs and use.

1.53 Leontief, Wassily. "Natural Resources, Environmental Disruption, and the Future World Economy." *Journal of International Affairs*, Vol. 31, No. 2, Fall/Winter 1977, pp. 267-73.

After describing the United Nations input-output model, the author examines the disparity in per capita gross product between developed and developing nations. Projects no diminution in the disparity by the start of the 21st century. Argues for reduced defense expenditures to make more resources available.

1.54 Leontief, Wassily, ed. *Structure, System and Economic Policy: Proceedings of the British Association for the Advancement of Science*. Cambridge, Cambridge University Press, 1977. 223 pp.

The authors provide examples of input-output analysis. They also deal with technical change, sectoral price movements, regional interdependence, energy policy, unemployment, and material supplies.

1.55 Leontief, Wassily, and others. *Studies in the Structure of the American Economy: Theoretical and Empirical Explorations in Input-Output Analysis*. Reprint Edition. White Plains, N.Y., International Arts and Sciences Press, 1977. 561 pp.

A collection of papers on static and dynamic theory, input-output techniques for interregional analysis the capital structure of the American economy, the use of technological data, and consumption and final demand.

1.56 Liao, Shu S. "Three-Step Analysis Measures Productivity." *Management Accounting*, Vol. 57, No. 2, August 1975, pp. 25-28.

Pointing out that cost control and efficiency in the operation of service departments are usually ignored, the author argues that productivity can be improved in such departments through a three-step program involving systems analysis, individual task analysis, and optimal level analysis.

1.57 Likens, J.D. "The Welfare Costs of Nonoptimal Airport Utilization." *Journal of Public Economics*, Vol. 5, No. 1-2, January-February 1976, pp. 81-102.

Develops a transportation model and applies it to the three airports in the Washington-Baltimore area, with differences that travellers place on the value of their travel time playing a crucial role in the model.

1.58 Lorion, Raymond P. "Strategies for the Assessment of Productivity in Health Care." *Social Policy*, Vol. 9, No. 2, September/October 1978, pp. 35-41.

Discusses research techniques to assess service delivery needs; availability and coordination of service delivery resources; and the effectiveness of the services provided.

1.59 Lowe, Adolph. *The Path of Economic Growth*. Cambridge, Cambridge University Press, 1976. 336 pp.

Deals with typical disequilibria arising from changing labor supply, technology, and supply of natural resources. Examines paths an economic system must pursue in order to resolve the disequilibria. Takes account of free market institutions as well as of centrally directed economies.

1.60 Machlup, Fritz. "Our Libraries: Can We Measure Their Holdings and Acquisitions." *AAUP Bulletin*, August 1976, pp. 303-07.

Explores the question as part of the problem of the dissemination of knowledge. Deals with some measurement problems and the relation between physical measures of acquisition and enlargement of knowledge.

1.61 Mandel, Ernest. *Late Capitalism*. Atlantic Highlands, N.J., Humanities Press, 1975, 599 pp.

Argues that the post-World War II boom and recent flagging of Western economies can be explained within the theoretical framework of Marx. Explains recurrence of trade cycles in terms of the secular tendency of the rate of profit to decline.

1.62 Mark, Jerome A. "Measuring Industry Productivity." In National Center for Productivity and Quality of Working Life, *Improving Productivity through Industry and Company Measurement*. Washington, U.S. Government Printing Office, October 1976, pp. 27-36.

Defines concepts. Discusses data availability, limitations of the data, and industry measures and their uses.

1.63 Miller, S.M. "Productivity and the Paradox of Service in a Profit Economy." *Social Policy*, Vol. 9, No. 2, September/October 1978, pp. 4-6.

Traces the concept of productivity and argues for the productiveness of human services. Also discusses the difference between productivity and effectiveness of government output.

1.64 Morgenstern, Oskar, and Thompson, Gerald L. *Mathematical Theory of Expanding and Contracting Economies*. Lexington, Mass., Heath, 1976. 275 pp.

The authors present their 20 years of work with John von Neumann's equilibrium model of an expanding economy and show how the model can be used in simulation.

1.65 Morishima, Michio. *The Economic Theory of Modern Society*. Translated by D.W. Anthony. Cambridge, New York, and Melbourne; Cambridge University Press, 1976. 347 pp.

Discusses the optimum use of mathematics in economics in the free market economy as well as in the socialist economy and in economic planning. Deals with Japan's economic system and its relatively recent take-off. Believes any economy must be concerned with efficiency and should distribute profits on the basis of the optimum that is mathematically derived.

1.66 Muellbauer, J. "The Cost of Living and Taste and Quality Change." *Journal of Economic Theory*, Vol. 10, No. 3, June 1975, pp. 269-83.

Investigates taste and quality change in the economic theory of index numbers. Raises doubts about the welfare conclusions often drawn from price differences between varieties of a good.

1.67 Myint, H. "Adam Smith's Theory of International Trade in the Perspective of Economic Development." *Economica*, Vol. 44, No. 175, August 1977, pp. 231-48.

Argues that Smith's failure to discover comparative costs was fortunate because he was free to adopt a more realistic model of the domestic economy. Points out that Smith's analysis incorporates long-run changes in factor supplies and their productivity, through capital accumulation and division of labor.

1.68 Neumann, Bruce R. "Hospital Productivity: An Evaluation of Proposed Measurement Methods." *Public Productivity Review*. Vol. 1, No. 5, Summer 1976, pp. 23-36.

Reviews measurement models at both the departmental and institutional levels.

1.69 Niehans, J. "Economic Growth and Decline with Exhaustible Resources." *De Economist*, Vol. 123, No. 1, 1975, pp. 1-22.

Extends neoclassical growth theory to exhaustible resources. Also examines the influence of resource-saving technical progress.

1.70 Ohta, H. "On Efficiency of Production Under Conditions of Imperfect Competition."

Southern Economic Journal, Vol. 43, No. 2, October 1976, pp. 1124-25.

Evaluates recent contributions to the discussion of efficiency in the theory of imperfect competition.

1.71 Pearce, I. F., and others. *A Model of Output, Employment, Wages and Prices in the U.K.* Cambridge, Cambridge University Press, 1976. 172 pp.

Presents a model covering a sample period, 1955-66. Argues that businessmen use simpler rules of thumb than implied by ex ante profit-maximizing assumptions. Intensity of capital and labor usage, short-run expectations, and customer reactions are believed to be the proximate determinants of businessmen's actions.

1.72 Parkin, Michael, and Nobay, A.R., eds. *Contemporary Issues in Economics: Proceedings of the Conference of the Association of University Teachers of Economics.* Manchester, Manchester University Press, 1975. 439 pp.

A collection of papers grouped under three main headings: Macroeconomics; allocation and efficiency, including review of the concept of efficiency; and growth, development, capital, and trade.

1.73 Peterson, R.E., and Seo, K.K. "Benefit-Cost Analysis for Developing Countries: A Decision-Tree Approach." *Economic Development and Cultural Change*, Vol. 24, No. 1, October 1975, pp. 185-97.

The authors provide a theoretical model which translates various qualitative factors into a quantitative index. The index makes it possible to determine the degree of uncertainty involved in a project.

1.74 Polenske, Karen R., and Skolka, Jiri V., eds. *Advances in Input-Output Analysis: Proceedings of the Sixth International Conference on Input-Output Techniques.* Vienna, April 22-26, 1974. Cambridge, Mass., Lippincott, Ballinger, 1976. 604 pp.

A collection of papers dealing with advances in dynamic systems for price and output analyses, production functions, interregional input-output models, and applications of input-output models to industrial planning and environmental and energy issues.

1.75 Porat, Marc Uri. *The Information Economy.* Office of Telecommunications, U.S. Department of Commerce. Washington, U.S. Government Printing Office, 1977. Vol. 1, *Definition and Measurement*, 250 pp. Vol. 2, *Sources and Methods for Measuring the Primary Information Sector*, 180 pp. Vol. 3, *The Interindustry Transactions Matrices (1967)*, 58 pp. Vol. 4, *The Technology Matrices (1967)*, 117 pp. Vol. 5, *The "Total Effect" Matrices (1967)*, 117 pp. Vol. 6, *The Labor Income by Industry Matrix of Employee Compensation (1967)*, 100 pp. Vol. 7, *The Labor Income by Industry Matrix of Employee Compensation (1970)*, 91 pp. Vol. 8, *National Income, Workforce, and Input-Output Accounts*, 91 pp. Vol. 9, *User's Guide to the Complete Database*, 71 pp.

Inquires into, and establishes statistically, the share of national income and product originating with the production, processing, and distribution of information goods and services. Finds that nearly one half of the gross national product and the labor force are bound up with information activity. Articulates certain information policy issues. Vols. 1 and 2 represent the "most critical part" of the report series; Vols. 3-9 represent supplements.

1.76 Robinson, Joan. "What Are the Questions?" *Journal of Economic Literature*, Vol. 15, No. 4, December 1977, pp. 1318-39.

Offers a critique of current orthodox economic theory. Deals with market equilibrium, the theory of the firm, prices, growth, and international trade. Concludes by doubting that economics can any longer satisfactorily address the problems arising from inflation, environmental pollution, and inequitable distribution of income.

1.77 Roskamp, Karl W. *The American Economy, 1929-70: Resources, Production, Income Distribution, and Use of Products.* Detroit, Wayne State University Press, 1977. 177 pp.

Describes essential features of the economy, including population and labor force, capital stock, and technological progress. Also discusses such major problems as employment and price stability.

1.78 Rottenberg, Irving, and Donahoe, Gerald. "Improved Deflation of Producers' Durable Equipment." *Survey of Current Business*, Vol. 55, No. 7, July 1975, pp. 20-23.

The authors describe a new procedure which changes the timing of price indexes used in deflation to a delivery basis.

1.79 Sato, Kazuo. "The Meaning and Measurement of the Real Value Added Index." *The Review of Economics and Statistics,* Vol. 58, No. 4, November 1976, pp. 434-42.

Discusses real value added as the contribution of primary inputs, economies of scale, and technical change in the production process. Critically reviews the use of Laspeyres and Paasche indexes for double deflation.

1.80 Schnabel, M. "Defining A Product." *Journal of Business,* Vol. 49, No. 4, October 1976, pp. 517-29.

Defines a product within the framework of consumer preference theory. Examines certain properties and consequences of the definition.

1.81 Sealey, C.W., Jr., and Lindley, J.T. "Inputs, Outputs and a Theory of Production and Cost at Depository Financial Institutions." *Journal of Finance,* Vol. 32, No. 4, September 1977, pp. 1251-66.

The authors argue that the decisionmaking process usually attributed to the financial firm is inconsistent with acceptable definitions of outputs and inputs, and also inconsistent with the technical aspects of production and cost for the firms.

1.82 Seguy, Rogelio Montemayor, and Ramirez, Jesus A. "The Use of Input-Output Analysis in an Econometric Model of the Mexican Economy." *Annals of Economic and Social Measurement,* Vol. 4, No. 4, Fall 1975, pp. 537-47.

The authors investigate the usefulness in the policy field of integrating an input-output matrix in a macroeconometric model. They find that investing in agriculture to raise its efficiency would stimulate industrial output and total output more than new public investment in industry would.

1.83 Siegel, Irving. "Measurement of Company Productivity." In U.S. National Center for Productivity and Working Life, *Improving Productivity Through Industry and Company Measurement.* Washington, U.S. Government Printing Office, October 1976, pp. 13-26.

Discusses background of and reasons for such measurement. Deals with comparisons of company and industry productivity and defines the concepts.

1.84 Star, S., and Hall, R.E. "An Approximate Divisia Index of Total Factor Productivity." *Econometrica,* Vol. 44, No. 2, March 1976, pp. 257-63.

The authors show that an approximation of the continuous Divisia index can be calculated using data only from the beginning and end of a long period of time. They argue that accurate productivity measurement is possible with use of decennial census data.

1.85 Stigler, George J. "The Xistence of X-Efficiency." *The American Economic Review,* Vol. 66, No. 1, March 1976, pp. 213-16.

Argues that X-efficiency can be accommodated within the traditional theory of allocative inefficiency.

1.86 Tang, Anthony M., and others, eds. *Evolution, Welfare and Time in Economics: Essays in Honor of Nicholas Georgescu-Roegen.* Lexington, Mass., Heath, 1976.

The authors present papers of a conference dealing with post-World War II growth in developing countries, laws of social change, the question of circular flow vs. evolution, and certain welfare questions.

1.87 Triplett, Jack E. *The Measurement of Inflation.* BLS Working Paper No. 40. Washington, Bureau of Labor Statistics, 1975. 83 pp.

Presents the theory of inflation measurement in terms of the Consumer Price Index and other measures of price change. Surveys empirical work on errors in price indexes due to quality changes.

1.88 Triplett, Jack, and McDonald, Richard J. "Assessing Quality Error in Output Measures: The Case of Refrigerators." *The Review of Income and Wealth,* Series 23, No. 2, June 1977, pp. 137-56.

Using hedonic methods to adjust for quality change, the authors present a new index of refrigerator output. They compare their measure with conventional ones, finding significant deviations.

1.89 Tuckman, Howard P. *Publications, Teaching, and the Academic Reward Structure.* Lexington, Mass., Heath, 1976. 122 pp.

Describes differences in the returns to faculty in different fields. Holds that variables that represent faculty outputs are only proxies for quality and quantity measures. Finds teaching may not be rewarded as highly as administration, and publication of articles.

1.90 United Nations. *Government Accounting in Economic Development Management.* New York, 1977. 84 pp.

Appraises the nature, scope, and contents of government accounting. Deals with functional areas, such as budgeting, performance measurement, enterprise accounting, and taxation. Also discusses possible improvements.

1.91 U.S. National Center for Productivity and Quality of Working Life. *Improving Productivity through Industry and Company Measurement.* Washington, U.S. Government Printing Office, October 1976. 77 pp.

Presents essays on techniques and pertinent data. Gives examples, and deals with research in measurement. (Essays are listed separately under subject headings.)

1.92 Uri, N.D. "A Spatial Equilibrium Model for Electrical Energy." *Journal of Regional Science,* Vol. 15, No. 3, December 1975, pp. 323-33.

Argues that there is misallocation of electrical energy among consumers within regions, and that generating electricity on a national basis would improve efficiency.

1.93 Verry, Donald, and Davies, Bleddyn. *University Costs and Outputs.* Studies on Education, Vol. 6. New York, Elsevier Scientific, 1976. 277 pp.

The authors examine the internal efficiency of higher education in the United Kingdom and the cost of supplying educated manpower. They outline the theoretical problems involved in measuring university inputs and outputs.

1.94 Wadman, William Morgan. *The Medical and Economic Concepts of Quality. Problems of Measurement and Implications for Efficient Health Care Delivery.* Doctoral dissertation presented to the Claremont Graduate School, 1976. 219 pp.

Reviews the concepts of quality historically, in both medicine and economics. Argues that economic theories of quality variation suggest improved techniques for assessing cost-quality relationships in health care. Outlines a procedure to develop an output approach to quality control.

1.95 Wheeler, John R. *Economic Efficiency and Optimal Scale in Ambulatory Medical Care Production.* Doctoral dissertation presented to The University of Michigan, 1976. 182 pp.

Investigates the effects of inefficiencies and suboptimal scale on costs. Derives input productivities from an estimated production function. Finds too few middle-level practitioners and nurses employed per physician.

1.96 Williams, Alan, and Anderson, Robert. *Efficiency in the Social Services.* Oxford, Basil Blackwell, 1975. 150 pp.

The authors discuss the meaning of efficiency in the social service field, suggest alternative ways of measuring it, and argue that microeconomic principles can be applied to increase efficiency.

1.97 Williams, George W. *The Capacity to Absorb Imported Technology. An Exploratory Study.* Doctoral dissertation presented to The University of Texas, 1977. 170 pp.

Examines determining factors, and develops indicators and variables in the measurement of absorptive capacity. Develops a predictive model. Focuses on transfers of military technology.

1.98 Zeckhauser, Richard, and others. *Benefit-Cost and Policy Analysis, 1974: An Aldine Annual on Forecasting, Decision-Making, and Evaluation.* Chicago, Aldine, 1975. 514 pp.

The authors apply benefit-cost analysis in public policy decisionmaking. They discuss social innovations, nuclear power plants and reactors, the impact of the national health program, energy, and environmental issues.

Measures

Total economy and private sectors

2.1 "Alternative Measures of Constant Dollar GNP." *Survey of Current Business,* Vol. 56, No. 9, September 1976, p. 49.

Discusses and shows differences in rates of change in constant-dollar gross national product over time, depending upon the base year chosen.

2.2 Andreassen, Arthur. "Changing Patterns of Demand: BLS Projections to 1990." *Monthly Labor Review,* Vol. 101, No. 12, December 1978, pp. 47-55.

After discussing underlying assumptions, the author deals with personal consumption expenditures, private investment, foreign trade, and the government sector. Also discusses the industry structure of demand.

2.3 Ball, D.E., and Walton, G.M. "Agricultural Productivity Change in Eighteenth-Century Pennsylvania." *Journal of Economic History,* Vol. 36, No. 1, March 1976, pp. 102-17.

The authors present tentative estimates of growth in total factor productivity and labor productivity in the agricultural sector. They point out the many difficulties in making such estimates.

2.4 Bezdek, Roger H., and Dunham, Constance R. "Structural Change in the American Economy, by Functional Industry Group." *Review of Income and Wealth,* Series 24, No. 1, March 1978, pp. 93-104.

Arguing that conventional input-output data fail to reveal clear patterns of postwar structural change, the authors reclassify the data into 11 functional industries. They find distinct shifts in the use of inputs and discuss the implications.

2.5 Bezdek, R.H., and Wendling, R.M. "Current- and Constant-Dollar Input-Output Forecasts for the U.S. Economy." *Journal of the American Statistical Association,* Vol. 71, No. 355, September 1976, pp. 543-51.

The authors test the accuracy of input-output-based forecasts. They find that constant-dollar forecasts by industry are more accurate in the long run.

2.6 Bowman, Charles T., and Morlan, Terry H. "Revised Projections of the U.S. Economy to 1980 and 1985." *Monthly Labor Review,* Vol. 99, No. 3, March 1976, pp. 9-21.

The authors evaluate three projected growth paths, postulating changes in output per job, employment, and other variables. They also discuss government policies, income flows, consumer expenditures, and other final demand categories.

2.7 Briscoe, G. "Recent Productivity Trends in the UK Service Sector." *Oxford Bulletin of Economics and Statistics,* Vol. 38, No. 4, November 1976, pp. 265-280.

Computes and compares alternative measures of productivity for both long-term trends and successive business cycles. Finds productivity growth in services lags consistently behind that in manufacturing.

2.8 Saunders, Norman C. "The U.S. Economy to 1990: Two Projections for Growth." *Monthly Labor Review,* Vol. 101, No. 12, December 1978, pp. 38-46.

After dealing with underlying assumptions, the author discusses aggregate demand, income distribution, and employment and hours.

2.9 Brown, Randall S. *Productivity, Returns, and the Structure of Production in American Agriculture, 1947-1974.* Doctoral dissertation presented to The University of Wisconsin, 1978. 260 pp.

Presents total factor productivity calculations. Analyzes production structure in terms of technological change, the supply of land, and family labor. Explores reasons for low return to farming.

2.10 Centro Studi E Ricerche Su Problemi Economic-Sociali. *Modernization of Agriculture: East and West: XI International Seminar.* Urbino, July 3-5, 1975, Milan, 1976. 273 pp.

The authors examine agricultural productivity in relatively high income countries, including the United States and Germany.

2.11 Cheng, Sheldon Shih-Don. *Cyclical Behavior of Labor Productivity in the U.S. Nonagricultural Private Economy and Manufacturing Industries.* Doctoral dissertation submitted to New York University, 1976. 149 pp.

Examines the slowdown in the growth of labor productivity, structural changes involved in the process, the influence of changes in real wage rates and in labor force composition, and other variables.

2.12 Harkness, J. and Kyle, J. F. "Factors Influencing United States Comparative Advantage." *Journal of International Economics,* Vol. 5, No. 2, May 1975, pp. 153-65.

Using 1958 industry input-output data, the authors measure the impact of various factor intensities on comparative advantage. They argue that capital intensity raises comparative advantage.

2.13 Hawrylyshyn, Oli. "Estimates of the Value of Household Work: Canada, 1961 and 1971." *The Review of Income and Wealth,* Series 24, No. 4, December 1978, pp. 333-56.

Presents estimates of imputed dollar values, found to be equal to 40 percent of Gross National Product in the two years examined. Discusses measurement issues.

2.14 Jaszi, George, and Carson, Carol S. "The National Income and Product Accounts of the United States: Revised Estimates, 1929-74." *Survey of Current Business,* Vol. 56, No. 1, January 1976, pp. 1-38.

The authors discuss definitional and classificational revisions, particularly for capital formation, consumption, and government transactions. They then deal with the statistical revisions in Gross National Product and its components, present constant-dollar estimates, and give highlights of revisions for the postwar period.

2.15 Kendrick, John W. "Productivity Trends and Prospects." In *U.S. Economic Growth from 1976 to 1986: Prospects, Problems, and Patterns.* Vol. 1 - *Productivity.* Studies Prepared for the Use of the Joint Economic Committee, U.S. Congress, October 1, 1976. Washington, U.S. Government Printing Office, pp. 1-15.

Discusses causes of productivity advance, the slowdown after 1965, and prospects.

2.16 Kutscher, Ronald E. "Revised BLS Projectsions to 1980 and 1985: An Overview." *Monthly Labor Review,* Vol. 99, No. 3, March 1976, pp. 3-8.

Presents new projections made in light of 1974-75 recession, and changes in energy prospects. Assumes higher unemployment and slower economic growth.

2.17 Kutscher, Ronald E.; Mark, Jerome A.; and Norsworthy, John R. "The Productivity Slowdown and the Outlook to 1985." *Monthly Labor Review,* Vol. 100, No. 5, May 1977, pp. 3-8.

After reviewing the factors influencing productivity change and historical movements, the authors discuss the role of intersectoral shifts in the slowdown; the changing composition of the labor force; capital-labor relationships; the effects of pollution control; and energy.

2.18 Madoo, Reynolds B. *Production, Efficiency, and Scale in U.S. Manufacturing.* An Inter-Intra Industry Analysis. Doctoral dissertation presented to the University of California, Berkeley, 1976. 170 pp.

Basing his study on the 4-digit level Census of Manufactures for 1967, the author finds that multiple technologies and efficiency practices exist among plants in the same industry, evidenced by wide differences in value added per man-hour and per establishment.

2.18A Mark, Jerome A. "Productivity Trends and Prospects." Statement before the Joint Economic Committee, U.S. Congress, June 8, 1978.

Reviews trends in labor productivity, emphasizing longer term movements. Also discusses underlying factors of change.

2.19 Martin, Lee R., ed. *A Survey of Agricultural Economics Literature. Vol. 1. Traditional Fields of Agricultural Economics, 1940s to 1970s.* Minneapolis, University of Minnesota Press, 1977. 540 pp.

The authors deal with farm management and production economics; productive efficiency in agricultural marketing; postwar trade policies in agriculture; agricultural price analysis and outlook; agricultural finance and capital markets; and technical change in agriculture.

2.20 Mohr, Michael. *A Quarterly Econometric Model of the Long-Term Structure of Production, Factor Demand, and Factor Productivity in 10 U.S. Manufacturing Industries.* BLS Staff Paper No. 9. Washington, U.S. Department of Labor, Bureau of Labor Statistics, 1978. 333 pp.

Using an econometric model, the author analyzes the nature and causes of the slowdown in productivity growth over the 1966-73 period. Discusses model structure and theory, long-run demand for factors of production, cyclical effects on factor demand, and other topics.

2.21 Niemi, Albert W. *Gross State Product and Productivity in the Southeast.* Chapel Hill, The University of North Carolina Press, 1975. 119 pp.

Discusses concept and estimation of gross State product. Examines economic growth in the Southeast, and per capita output trends. Deals with the role of productivity in the region's economic growth.

2.22 Norsworthy, J.R., and Fulco, L.J. "New Sector Definitions for Productivity Series." *Monthly Labor Review,* Vol. 99, No. 10, October 1976, pp. 40-41.

The authors discuss the change in concept from the private nonfarm sector to the private nonfarm business sector.

2.23 Personick, Valerie A., and Sylvester, Robert A. "Evaluation of BLS 1970 Economic and Employment Projections." *Monthly Labor Review,* Vol. 99, No. 8, August 1976, pp. 13-26.

The authors discuss reasons for the deviation of actual from projected results, dealing especially with "errors" in the projections of employment by industry.

2.24 Renshaw, Edward F. "Productivity." In *U.S. Economic Growth from 1976 to 1986: Prospects, Problems, and Patterns.* Vol. 1. U.S. Congress, Joint Economic Committee, October 1, 1976. Washington, U.S. Government Printing Office, pp. 21-56.

Discusses reasons for the recent productivity slump, the relation of productivity to technology, environmental quality, and demand for services, and makes recommendations for increasing productivity.

2.25 Reynolds, T.M.; Mitchell, D.O.; and Heady, E.O. "Alternative Futures in World Food Demand, Export, Farm Productivity, and Agricultural Welfare: A Simulation." *Nebraska Journal of Economics and Business,* Vol. 15, No. 4, Autumn 1976, pp. 5-19.

Discussing both food surpluses and food shortages during the last 10 years, the authors present a simulation model to evaluate policy alternatives for the future. The model shows that a more efficient agriculture can be pursued if exports of sufficient magnitude are maintained.

2.26 Riche, Martha F. *Productivity and the Economy.* Bulletin 1926. Department of Labor, U.S. Bureau of Labor Statistics, 1977. Washington, U.S. Government Printing Office. 105 pp.

Presents charts and text on trends in productivity, costs and prices, and other variables relating to productivity growth.

2.27 Satiroglu, Kadir Demir. *Analysis of Agricultural Production in the United States, 1950-1974.* Doctoral dissertation submitted to Colorado State University, 1976. 203 pp.

Seeks to explain the structural transformation of input use in agriculture. Finds commercial inputs to have been the major source of expanding output relative to inputs of land and labor.

2.28 Swan, N.M. *Governments and Construction Instability.* Ottawa, Economic Council of Canada, 1975. 101 pp.

Considers policies designed to stabilize construction, including adjustment in timing of projects, applying market incentives and disincentives to counter the construction cycle, and use of monetary and fiscal policy.

2.29 Townsend, Henry L., and Sivia, Timothy B. *The American Economy in 1986.* Washington, National Planning Association, 1977. 78 pp.

Presents projections of such variables as population and labor force, gross national product and personal income, government receipts and expenditures, and employment and hours. Discusses the rationale for projections, including assumptions regarding energy policy.

2.30 Terleckyj, Nestor E. and Sivia, Timothy B. *Growth Outlook for the American Economy, 1978-1987.* Washington, National Planning Association, 1978. 104 pp.

The authors examine changes in the economy over the postwar period, including the decline in growth since the mid-sixties, and the growth of government. They present projections of such variables as hours of work, productivity, the capital stock, research and development expenditures, and the gross national product and its major components.

2.31 Walker, Kathryn E., and Woods, Margaret E. *Time Use: A Measure of Household Production of Family Goods and Services.* Washington, American Home Economics Association, 1976. 328 pp.

The authors present a detailed method for measuring household output, together with aggregate measures of household work and measures of individual types of household work, e.g., food preparation, care of family members, and care of the house.

Industries

3.1 Adams, D.R., Jr. "Residential Construction Industry in the Early Nineteenth Century." *Journal of Economic History,* Vol. 35, No. 4, December 1975, pp. 794-816.

Constructs a weighted cost index for the construction industry in the antebellum period. Finds costs and productivity to have been stable over a very long time period, and that industry did not replace factor inputs to lower costs.

3.2 Akinwumi, James Adewuyi. *Labor Productivity in Fluid Milk Processing and Packaging Operations.* Doctoral dissertation presented to Cornell University, 1976. 234 pp.

Examines factors of productivity change, determining their magnitudes. Studies 29 plants, 1972-74, finding that increased utilization of capacity, and packaging in quart and third-quart containers raises productivity. Contrasts "best" plants with "poorer" plants.

3.3 Carey, John L., and Otto, Phyllis Flohr. "Output per Unit of Labor Input in the Retail Food Store Industry." *Monthly Labor Review,* Vol. 100, No. 1, January 1977, pp. 42-47.

After reviewing long-term trends in productivity and related variables, the authors discuss changes in industry structure and in technology and store operations, together with the likely impact of current organizational trends on future productivity movements.

3.4 Carnes, Richard B. "Laundry and Cleaning Services Pressed to Post Productivity Gains." *Monthly Labor Review,* Vol. 101, No. 2, February 1978, pp. 38-41.

After discussing trends in productivity and related variables, the author analyzes changes in demand and how they affected segments of the industry. Also discusses reasons for declining labor inputs, and technological changes.

3.5 Carnes, Richard B. "Productivity and Technology in the Electric Lamp Industry." *Monthly Labor Review,* Vol. 101, No. 8, August 1978, pp. 15-19.

After discussing trends, the author deals with employment and capital expenditures, as well as with types of output produced and underlying technologies.

3.6 Carnes, Richard B., and Brand, Horst. "Productivity and New Technology in Eating and Drinking Places." *Monthly Labor Review,* Vol. 100, No. 9, September 1977, pp. 9-15.

After discussing long-term trends in productivity and related variables, the authors discuss employment and hours, structural changes in the industry, and labor-saving innovations in food preparation.

3.7 Cohn, Elchanan. *Input-Output Analysis in Public Education.* Cambridge, Mass., Lippincott, Ballinger, 1975. 137 pp.

Maintains that better management would make it possible to reduce input costs without reducing the level of educational output. Explores some techniques that could aid in attaining better input and output mixes. Provides an overview of the input-output concept in education and reviews the literature on the educational production function.

3.8 Duke, John. "New-Car Dealers Experience Long-Term Gains in Productivity." *Monthly Labor Review*, Vol. 100, No. 3, March 1977, pp. 29-33.

After discussing long-term trends in productivity and related variables, the author discusses scale economies and new technologies in repair services, as well as output and demand patterns, and changes in employee-hours.

3.9 Duke, John, and Huffstutler, Clyde. "Productivity in Sawmills Increases as Labor Input Declines Substantially." *Monthly Labor Review*, Vol. 100, No. 4, April 1977, pp. 33-37.

After reviewing trends in productivity and related variables, the authors discuss major factors in demand, the reduction in employment, and changing sawmill technology. They also discuss regional variations in output and employment.

3.10 Farris, Mary Robinson. "The Veneer and Plywood Industry: Above-Average Productivity Gains." *Monthly Labor Review*, Vol. 101, No. 9, September 1978, pp. 26-29.

After discussing trends in productivity, the author deals with underlying factors such as housing demand and technological developments.

3.11 Finn, Joseph T., and Wood, Frank L. *Labor and Material Requirements for Private Multifamily Housing Construction*. Bulletin 1892. U.S. Department of Labor, Bureau of Labor Statistics, 1976. Washington, U.S. Government Printing Office. 73 pp.

The authors analyze requirements by occupation and type of contractor, the distribution of costs, and regional differences. They examine on-site as well as off-site employee hour requirements.

3.12 Froomkin, Joseph N., and others. *Education as an Industry*. A Conference of the Universities-National Bureau Committee for Economic Research. Published for the National Bureau of Economic Research. Cambridge, Ballinger, 1976. 489 pp.

A collection of papers treating such topics as the educational production function, using a variety of output measures; analytical methods applied to compensatory education for disadvantaged students; the demand for, and productivity in, higher education; instructional costs of university outputs, and policy issues.

3.13 Gantz, Marvin E. "Productivity Measurement at ALCOA." In National Center for Productivity and Quality of Working Life, *Improving Productivity through Industry and Company Measurement*. Washington, U.S. Government Printing Office, October 1976, pp. 37-46.

Discusses comparisons of the company's with the industry's productivity. Relates steps that led to productivity improvements.

3.14 Garman, George B. *A Study of Productivity in the American Steel Industry*. Doctoral dissertation presented to the University of Notre Dame, 1978. 161 pp.

Examines feasibility of various production functions in addressing issues of capacity needs, pricing, foreign competition, and supply and demand. Finds that the form of the production function differs among steel producers.

3.15 Gottlieb, Manual. *Long Swings in Urban Development*. NBER Urban and Regional Studies, No. 4. New York, National Bureau of Economic Research; distributed by Columbia University Press, New York and London, 1976. 360 pp.

Using building permits as means of measurement, determines the extent in time and space of long urban-building fluctuations, and how the cycle compares with business cycles. Also considers degree of similarity of fluctuations in various countries.

3.16 Hauck, Walter, and others. "Surgeons in the United States: Activities, Output, and Income." *JAMA, Journal of the American Medical Association*, Vol. 236, No. 16, Oct. 18, 1976, pp. 1864-71.

By means of a national survey, the authors found respondents worked 46 hours a week, on average; spent half their work time in hospitals, with 20 percent in the operating room; and performed 170 operations annually.

3.17 Henneberger, J. Edwin. "Productivity Growth Below Average in the Household Furniture Industry." *Monthly Labor Review,* Vol. 101, No. 11, November 1978, pp. 23-29.

After reporting on productivity trends, the author discusses factors underlying changes in demand, as well as employment and the "limited" extent of innovations.

3.18 Herman, Arthur S. "Productivity Increased During 1977 in a Majority of Selected Industries." *Monthly Labor Review,* Vol. 101, No. 9, September 1978, pp. 54-57.

Summarizes findings on trends in productivity and related variables in a large number of manufacturing and nonmanufacturing industries.

3.19 Herman, Arthur S. "Productivity Rates Rose in 1976 for Almost All Industries Surveyed." *Monthly Labor Review,* Vol. 100, No. 10, October 1977, pp. 57-60.

Summarizes findings for a large number of manufacturing and nonmanufacturing industries.

3.20 Herman, Arthur S. "Report on Productivity Gains in Selected Industries." *Monthly Labor Review,* Vol. 100, No. 2, February 1977, pp. 80-83.

Summarizes productivity trends in 1975 in a large number of manufacturing and nonmanufacturing industries.

3.21 Huffstutler, Clyde, and Broad, Michael. "Productivity in the Nonmetallic Minerals Industry, 1954-75." *Monthly Labor Review,* Vol. 99, No. 6, June 1976, pp. 25-30.

After discussing long-term changes in productivity and related variables, the authors describe technological improvements, changes in industry structure, and capital expenditures.

3.22 Jelinek, Richard C., and others. *A Review and Evaluation of Nursing Productivity.* U.S. Department of Health, Education and Welfare, Public Health Service. Washington, U.S. Government Printing Office, November 1976. 380 pp.

The authors investigate various definitions of productivity. They classify existing literature in terms of input, technology, environment, and output. They also evaluate recent research on nursing productivity, and present recommendations.

3.23 King Research Inc. *Library Photocopying in the United States.* Washington, National Commission on Libraries and Information Science. 251 pp.

Presents data on the volume of photocopying and discusses the implications of copyright laws for photocopying.

3.24 Leepson, Marc. *Fast Food: U.S. Growth Industry.* Washington, Editorial Research Report, 1978, Vol. 2, No. 22.

Examines the industry's rapid growth in the seventies, its evolution, and its influence on U.S. eating habits.

3.25 Mooney, Thomas J., and Tschetter, John H. "Revised Industry Projections to 1985." *Monthly Labor Review,* Vol. 99, No. 11, November 1976, pp. 3-9.

The authors present industry breakdowns of projections of real gross national product, and certain policy assumptions.

3.26 National Academy of Engineering. *State of the Nation's Air Transportation System:* Summary Proceedings of a Symposium, June 3-4, 1976. Washington, D.C., National Academy of Sciences, 1976. 72 pp.

The authors and panel participants discuss new technologies, productivity, and the economics of air transportation.

3.27 Orr, James M. *Libraries as Communication Systems.* Westport, Greenwood Press, 1977. 220 pp.

Treating libraries in terms of systems theory, the author discusses them as memories. He deals with feedback from this memory, including access and retrieval. He also discusses the function of libraries in the era of photographic and electronic reproduction.

3.28 Otto, Phyllis Flohr. "The Pattern of Productivity in the Lighting Fixtures Industry." *Monthly Labor Review,* Vol. 101, No. 9, September 1978, pp. 31-37

After discussing trends, the author discusses major underlying factors of change, as well as labor and capital resources, and technology.

3.29 Peck, Gerald E. "Measurement of Warehousing Productivity." In National Center for Productivity and Quality of Working Life, *Improving Productivity through Industry and Company Measurement.* Washington, U.S. Government Printing Office, October 1976, pp. 47-58.

Discusses standards for productivity comparisons in terms of appropriate ratios, stressing the importance of precise definitions. Deals with the items entering productivity measurement, and their interpretation.

3.30 "Productivity in the Human Services." Whole issue. *Social Policy,* Vol. 9, No. 2, Sep./Oct. 1978.

Presents articles on productivity in health care, education, the consumer and productivity, and output measures. (Separate articles are listed under subject headings).

3.31 Scheppach, Raymond C., Jr., and Woehlcke, L. Carl. *Transportation Productivity.* Lexington, Mass., Heath, 1975. 124 pp.

Deals with productivity measurement for applications in rail, air, and motor freight transportation, and discusses various conceptual problems.

3.32 Sloan, F.A., and Lorant, J.H. "The Allocation of Physicians Services: Evidence on Length-of-Visit." *Quarterly Review of Economics and Business,* Vol. 16, No. 3, Autumn 1976, pp. 85-103.

The authors find that the impact of insurance coverage on length of visit is not substantial, but that both family income and the physician-population ratio in the county in which physicians practice are positively related to length of visit.

3.33 Urisko, James A. "Productivity in Grain Mill Products: Output Up, Employment Stable." *Monthly Labor Review,* Vol. 100, No. 4, April 1977, pp. 38-43.

After reviewing long-term trends in productivity and related variables. the author discusses changes in output, demand, and employment, and technological changes.

3.34 U.S. Department of Labor, Bureau of Labor Statistics. *Productivity Indexes for Selected Industries, 1978 Edition.* Bulletin 2002. Washington, U.S. Government Printing Office, 1978. 247 pp. (Annually since 1953.)

Presents measures, in the form of indexes and charts, reflecting the relations between output and employment and employee-hours for a wide range of manufacturing and non-manufacturing industries. Also discusses current developments and long-term trends, and outlines methods used in deriving the measures.

3.35 U.S. General Accounting Office. *Ways to Increase Shipbuilding Productivity, Maritime Administration, Department of Defense.* Report to the Congress by the Comptroller General of the United States. Washington, General Accounting Office, 1976. 45 pp.

Discusses the importance of shipbuilding productivity in view of large Government expenditures for shipbuilding. Offers 70 suggestions to improve productivity in facilities acquisition and management; production planning and control; labor morale, absenteeism, and turnover; preventive maintenance; industrial engineering; and other areas.

3.36 Weeks, Lewis E., and Berman, Howard J., eds. *Economics in Health Care.* Germantown, Md. Aspen Systems, 1977. 416 pp.

A collection of essays dealing with medical manpower, hospital utilization and costs, physicians' patient volume, case mix and resource use, and other topics.

3.37 York, James, and Brand, Horst. "Productivity and Technology in the Electric Meter Industry." *Monthly Labor Review,* Vol. 101, No. 8, August 1978, pp. 20-25.

After discussing trends in productivity and output, the authors deal with employment, technological change, capital expenditures, [illegible]ure of the industry.

Public sector

4.1 Anderson, Alan D. *The Origin and Resolution of an Urban Crisis: Baltimore, 1890-1930.* Baltimore, Johns Hopkins University Press, 1977. 143 pp.

Discusses how cost increases in urban services occur. Also discusses productivity in these services. Finds that innovations in transportation account for most of the reduced density in central areas.

4.2 Anderson, David L. *Public Sector Output Measurement in the Hospital Clinical Laboratory.* Doctoral dissertation presented to Queen's University at Kingston (Canada), 1975. Pp. not indicated.

Derives various output measures. Finds unit cost rankings and scale estimates to be sensitive to output specifications. Notes implications for incentive reimbursements and regionalization proposals.

4.3 Balk, Walter L. *Improving Government Productivity. Some Policy Perspectives.* Beverly Hills, Sage Publications, 1975. 70 pp.

Discusses conceptual issues, measurement and information systems, motivation, influences upon public agencies, and related topics.

4.4 Chadwin, Mark L., and others. *The Employment Service. An Institutional Analysis.* U.S. Department of Labor, Employment and Training Administration. Washington, U.S. Government Printing Office, 1977. 216 pp.

The authors examine institutional factors affecting placement productivity in the employment service. They focus on the internal organization of high- and low-performing agencies, and on their linkages to State and local government.

4.5 Clark, Susan. *Total Performance Management: Some Pointers for Action.* National Center for Productivity and Quality of Working Life. Washington, U.S. Government Printing Office, 1978. 49 pp.

Describes a method to measure productivity of public agencies not only in traditional terms, but also according to how satisfied employees are with their jobs, and how satisfied citizens are with the services provided.

4.6 Clawson, Marion. *The Economics of National Forest Management.* Baltimore, Johns Hopkins University Press, 1976. 117 pp.

Considers the costs of national forest management and of all outputs of the forests. Discusses acreage, yields, prices of products, and potential. Concludes that national forests are managed inefficiently.

4.7 Committee for Economic Development. *Improving Productivity in State and Local Government. A Statement on National Policy.* New York, March 1976. 92 pp.

Seeks to define the dimensions of State and local productivity and to identify opportunities for improvement.

4.8 David Sirota Associates, Inc. *Employee Attitudes and Productivity Differences between the Public and Private Sector.* National Center for Productivity and Quality of Working Life. Washington, U.S. Government Printing Office, February 1978. 20 pp.

Finds that private sector employees and managers usually consider their organizations more effective than do public sector employees. Also finds that public sector employees do not have a high regard for the competence of their supervisors and senior managers.

4.9 Doganis, R.S., and Thompson, G.F. "Airport Profitability and Managerial Effectiveness." *Manchester School of Economics and Social Studies,* Vol. 43, No. 4, December 1975, pp. 331-52.

The authors argue that customary profit and loss accounts do not adequately allow for long-run structural and technological factors which are not immediately subject to managements' action.

4.10 Feldstein, Martin S., and Inman, Robert P., eds. *The Economics of Public Services: Proceedings of a Conference Held by the International Economic Association.* London, Macmillan Press, 1977. 529 pp.

The authors explore the importance of distributional equity as well as of economic efficiency, the role of decentralization, and effects on the economy as a whole. They consider housing programs, education, social security, and public finance.

4.11 "Government Productivity and Program Evaluation Issues." *Public Productivity Review,* Vol. 1, No. 3, March 1976. Whole issue.

Presents papers on the relationship between the two subjects. Discusses productivity measurement on the State and local level, and the implications for personnel managers.

4.12 Greytak, David, and Phares, Donald. *Municipal Output and Performance in New York City.* Lexington, Mass.; Toronto and London, Heath, 1976. 180 pp.

The authors measure output in the form of government activities or services, rather than dollars spent. They conclude that measures show a steady decline in performance.

4.13 Hayes, Frederick O'R. *Productivity in Local Government.* Lexington, Mass., Heath, 1977. 295 pp.

Examines productivity in eight communities. Discusses results of productivity programs and concludes that they lead to a better understanding of managerial change and innovation.

4.14 Holzer, Marc, ed. *Productivity in Public Organizations.* Port Washington, N.Y.; Dunellen, Kennikat Press, 1976 328 pp.

A collection of papers concerned with the measurement and analysis of productivity.

4.15 International City Management Association. *Guide to Productivity Improvement Projects.* Third Edition. National Center for Productivity and Quality of Working Life. Washington, U.S. Government Printing Office, July 1976. 117 pp.

Briefly describes over 400 projects in local communities which produced cost savings and/or improved services.

4.16 Job, Barbara Cottman. "More Public Services Spur Growth in Government Employment." *Monthly Labor Review,* Vol. 101, No. 9, September 1978, pp. 3-7.

Traces the growth in public employment. Discusses occupational and industrial distribution, as well as race and sex patterns.

4.17 Kaufman, Herbert. *Red Tape: Its Origins, Uses, and Abuses.* Washington, The Brookings Institution, 1977. 100 pp.

Analyses the problems of red tape, drawing heavily on administration in the Federal Government. Reviews strategies for improving the situation and their prospects for adoption.

4.18 Kemper, Peter, and Quigley, John M. *The Economics of Refuse Collection.* Cambridge, Lippincott, Ballinger, 1976. 181 pp.

The authors do not find important economies of scale in the industry. They conclude that contract collection of refuse is less costly than private or municipal collections. They also argue that a user charge would improve efficiency.

4.19 Kull, Donald, and others. "Productivity in Government. A Symposium." *Public Administration Review,* Vol. 38, No. 1, January/February 1978, pp. 1-50.

The authors discuss the relation between the national economy and productivity in government; productivity programs in the Federal Government; city and country productivity programs; the relation between State and local productivity and the private sector; and related subjects.

4.20 Larson, Richard C. *Police Accountability. Performance Measures and Unionism.* Lexington, Mass., Lexington Books, 1978. 208 pp.

Probing for cost-effectiveness of service delivery, the author discusses police performance measures. He also discusses recent employment and expenditure trends in city police departments, police unionism, and paraprofessionals for police.

4.21 Maciariello, Joseph A. *Dynamic Benefit-Cost Analysis: Evaluation of Public Policy in a Dynamic Urban Model.*

Presents an urban model which shows the usefulness of dynamic benefit-cost analysis.

4.22 Pagano, Anthony M. *Measuring the Output of State and Local Units of Government.* Doctoral dissertation presented to The Pennsylvania State University, 1978. 221 pp.

Examines the nature of public output. Develops measures under various assumptions, such as budget maximization. Also studies the effect of price, quality, and quantity variations.

4.23 Petro, Peter G., ed. *The Changing Mission of the U.S. Employment Service.* Report of Symposium Presentations, Discussions and

Recommendations, on the Occasion of the 40th Anniversary. Washington, U.S. Department of Labor, Employment and Training Administration, 1977. 141 pp.

The contributors focus on increasing the productivity and improving the operation of the labor market. They discuss such subjects as the Employment Service's potential impact on the economy; the feasibility of developing a computer matching system; improvement in the quality and dissemination of labor market information; and special needs of minority groups.

4.24 Productivity Management Associates, Inc. *Improving Productivity: A Self-Audit and Guide for Federal Executives and Managers.* National Center for Productivity and Quality of Working Life. Washington, U.S. Government Printing Office, Fall 1978. 68 pp.

The authors seek to identify areas of program improvement, and outline measures to improve productivity. They also consider measurement and analysis of efficiency, quality, and effectiveness.

4.25 Rodgers, Charles S. *The Internal Allocation of Labor in a Federal Agency.* Doctoral dissertation presented to Brandeis University, 1977. 297 pp.

Examines the extent to which allocative decisions within an agency reflect productivity and merit. Analyzes the rules and regulations governing internal movements of employees, and competitive and noncompetitive promotion policies. Finds little relation between movements of employees and productivity considerations.

4.26 Siegfried, John J. "Public Sector Productivity." *Atlanta Economic Review,* Vol. 27, No. 5, September/October 1977, pp. 29-34.

Examines recent advances in public sector productivity measurement, especially in the Federal sector. Also deals with the bias introduced into overall productivity measures by assuming zero productivity improvement in governments.

4.27 Starrett, D.A. "Measuring Returns to Scale in the Aggregate, and the Scale Effect of Public Goods." *Econometrica,* Vol. 45, No. 6, September 1977, pp. 1439-55.

Argues that his measures show that public goods provide an element of increasing returns, while public "bads" introduce an element of diminishing returns.

4.28 Tabasz, Thomas F. *Toward an Economics of Prisons.* Lexington, Mass., Heath, 1975. 218 pp.

Examines social costs and benefits of a corrections system. Treats prisons as social investments, and examines their rate of return.

4.29 Turner, Wayne E., and Craig, R.J. "Productivity Improvement Programs in the Public Sector." *Public Productivity Review,* Vol. 3, No. 1, Spring 1978, pp. 3-22.

The authors argue the case for relatively simple measurement techniques. They discuss levels of increasing sophistication, beginning with work simplification.

4.30 U.S. Commission on Federal Paperwork. *Service Management.* Washington, U.S. Government Printing Office, 1977. 38 pp.

Proposes full-cost accounting, alternatives analysis, and partnership efforts to overcome crippling red tape and paperwork affecting major Federal programs. Presents case studies.

4.31 U.S. General Accounting Office. *The Government Employees Training Act of 1958. A Progress Report.* Washington, 1977. 58 pp.

Finds "unenthusiastic" reception of the Civil Service Commission's leadership training functions by Federal agencies, and no methodical assessment of Federal training management. Also finds no effective evaluation of training programs by agencies.

4.32 U.S. General Accounting Office. *Long-Range Analysis Activities in Seven Federal Agencies.* Report to the Congress by the Comptroller General of the United States. Washington, 1976. 74 pp.

Specifies the components of effective long-range analysis. Finds that long-term agency objectives were often not clearly defined and that decisions to undertake long-range analyses did not necessarily result from systematic review of issues.

4.33 U.S. National Center for Productivity and Quality of Working Life. *Improving Governmental Productivity: Selected Case Studies.* Washington, U.S. Government Printing Office, Spring 1977. 84 pp.

Details improvements in efficiency in local, county, and State governments in a variety of services, including food stamp applications, water supply and distribution, and road repair.

4.34 U.S. National Center for Productivity and Quality of Working Life. *Managing Inspections for Greater Productivity.* Washington, U.S. Government Printing Office, Winter 1977. 30 pp.

Reports on productivity improvement techniques which have been applied in a broad range of inspection-related responsibilities, including construction, occupational safety and health, fire, and streets and sidewalks.

4.35 Usilaner, Brian. "Productivity—A Management Tool for Controlling Government Spending." *Public Productivity Review,* Vol. III, No. 2, Summer/Fall 1978, pp. 25-34.

Argues the use of productivity measurement to assess management actions, analyze future investment, and heighten government credibility. Analyzes examples of agency productivity improvement.

4.36 Warren, R.S., Jr. "Bureaucratic Performance and Budgetary Reward." *Public Choice,* Vol. 24, Winter 1975, pp. 51-57.

Develops an adaptive expectations model of budgeting behavior, with time series data for the U.S. Securities and Exchange Commission. Finds that the appropriations process may penalize agencies that perform better than expected by reducing their following-year budget.

4.37 Wolfe, Joan L., and Heaphy, John F., eds. *Readings on Productivity in Policing.* Washington, Police Foundation, 1976. 160 pp.

The authors investigate productivity concepts and suggest types of measurement to estimate police productivity.

International

5.1 Ahmad, Sultan. *Short-Cut Methods of International Comparisons of Real Product and Purchasing Power of Currencies.* Doctoral dissertation presented to the University of Pennsylvania, 1978. 411 pp.

Proposes to exploit relationships between real national income in a country and monetary or nonmonetary indicators, to provide a reduced information approach in which purchasing power parities are estimated from small subsets of cheaply collected price data.

5.2 Aresvik, Oddvar. *The Agricultural Development of Turkey.* New York, Praeger, 1975. 220 pp.

Discusses the significance of levels of agricultural productivity, the quality of inputs, and the improved technology introduced in various parts of the country at different times.

5.3 Boner, Barbara, and Neef, Arthur. "Productivity and Unit Labor Costs in 12 Industrial Countries." *Monthly Labor Review,* Vol. 100, No. 7, July 1977, pp. 11-17.

The authors compare trends in productivity and related variables, as well as in hourly compensation and unit labor costs.

5.4 Bergson, Abram. *Productivity and the Social System—the USSR and the West.* Cambridge, Harvard University Press, 1978. 256 pp.

Explores the comparative merits of capitalism and socialism in terms of levels and growth of productivity. Analyzes general economic performance as well as specific sectors. Discusses reforms instituted in 1965 and development policies since Stalin.

5.5 Burkman, Jon Herbert. *Measurement of Technological Change and Productivity Growth in the Textile Industry of Japan and Hong Kong, 1950-74.* Doctoral dissertation presented to the University of Pittsburgh, 1977. 256 pp.

Examines production and factor inputs in the spinning and weaving sectors. Finds technological change rather than capital investment to have contributed most to the industry's growth.

5.6 Clark, C. "Economic Development in Communist China." *Journal of Political Economy,* Vol. 84, No. 2, April 1976, pp. 239-64.

Finds that the long-run rate of increase in per capita gross national product in China has been less than the average for developing countries, and that inequalities in income distribution are similar to those of other countries.

5.7 Cohn, Stanley H. "The Soviet Path to Economic Growth: A Comparative Analysis." *Review of Income and Wealth,* Series 22, No. 1, March 1976, pp. 49-59.

Follows the method developed by Denison and compares the results with those for the United States, Japan, and Northwest Europe.

5.8 Daly, Keith, and Neef, Arthur. "Productivity and Unit Labor Costs in 11 Industrial Countries, 1977." *Monthly Labor Review,* Vol. 101, No. 11, November 1978, pp. 11-17.

The authors discuss slowed productivity gains, linking the slowdown to decelerated output growth. They also deal with labor cost trends.

5.9 Denison, Edward F., and Chung, William K. *How Japan's Economy Grew So Fast: The Sources of Postwar Expansion.* Washington, D.C., The Brookings Institution, 1976. 267 pp.

The authors identify the sources of growth, discussing trends in labor, capital, reallocation of resources, advances of knowledge, and economies of scale. They analyze the reasons for low output per worker as compared to the United States.

5.10 Desai, P. "The Production Function and Technical Change in Postwar Soviet Industry: A Reexamination." *American Economic Review,* Vol. 66, No. 3, June 1976, pp. 372-81.

Estimates the growth of Soviet industry in terms of elasticity of substitution among factor inputs and parameters of technical change. Finds a higher estimate of technical change than earlier, and the possibility of material-saving progress.

5.11 Elkan, Peter G. "Measuring the Impact of Economic Integration among Developing Countries." *Journal of Common Market Studies,* Vol. 14, No. 1, September 1975, pp. 56-68.

Derives measures of the progress of economic integration for developing countries. Observes that such countries can secure economies of scale through integration, thereby raising productivity of their manufacturing resources. Argues that all countries within an integration group can benefit from industrialization, but that exports of the weaker and geographically outlying countries need to be promoted.

5.12 George, Kenneth D., and Ward, T.S. *The Structure of Industry in the EEC: An International Comparison.* University of Cambridge, Department of Applied Economics, Occasional Paper 43. New York, Cambridge University Press, 1975. 75 pp.

The authors compare the structure of industry in the British economy to that in West Germany, France, and Italy, using 1963 data focusing on concentration of industry, growth, and productivity. They compare the importance of increasing returns and labor productivity at the industry level, and consider the relationship between changes in output and output per person.

5.13 Hayami, Yujiro and others. *A Century of Agricultural Growth in Japan: Its Relevance to Asian Development.* Minneapolis, University of Minnesota Press, 1975. 248 pp.

The authors examine long-term trends in outputs, inputs, productivity, and product and factor prices. They analyze the contributions of various factors of production within the framework of an aggregate production function. They also measure the social returns to public investments in rice-breeding programs.

5.14 Hirsch, Seev. *Rich Man's, Poor Man's, and Every Man's Goods: Aspects of Industrialization.* Institut für Weltwirtschaft an der Universität Kiel, Kieler Studien No. 148. Tübingen, J.C.B. Mohr, 1977. 150 pp.

Analyzes the patterns of industrialization and trade for 25 industries in 29 countries at all levels of development. Considers the relevance of the traditional comparative advantage model and discusses models that incorporate human capital and technological change. Concludes that the scarcity of skilled human capital is the major drawback to developing countries.

5.15 Indian National Productivity Council. *Productivity Trends in Cotton Textile Industry in India.* New Delhi, 1976. 148 pp.

Examines the historical development of cotton textiles, individual and total factor productivity trends, capacity utilization, and capital formation. Presents industry outlook to 2000.

5.16 Kennedy, Kieran A., and Bruton, Richard. *The Irish Economy.* Brussels, The Economic and Social Research Institute, 1975. 168 pp.

The authors examine the agricultural, industrial, and service sectors. They hold that the major challenge has been to achieve full employment.

5.17 Kravis, I.B. "A Survey of International Comparisons of Productivity." *Economic Journal,* Vol. 86, No. 341, March 1976, pp. 1-44.

Reviews methods used in comparing productivity among countries, and summarizes results of major studies, with emphasis on the period since the late 1930's. Examines comparisons of product per capita and of labor productivity at the aggregate level, for major sectors, and for individual industries.

5.18 Kravis, Irving, and others. "Real GDP per capita for More than One Hundred Countries." *Economic Journal*, Vol. 88, No. 350, June 1978, pp. 215-242.

The authors present data based on measures of purchasing power for 16 countries, and derive the remaining data by extrapolating the relationship found for these countries between real gross domestic product per capita and certain independent variables.

5.19 Lewis, J. Patrick. "Postwar Economic Growth and Productivity in the Soviet Communications Industry." *The Bell Journal of Economics,* Vol. 6, No. 2, Autumn 1975, pp. 430-50.

Presents factor productivity estimates derived from capital stock data. Finds that postwar growth arose mainly from expanded use of labor and capital inputs, and only slightly from productivity gains.

5.19A Mark, Jerome A. "The BLS Program for International Comparisons of Productivity and Costs." Remarks before the Federal Statistics Users Conference, New York, N.Y., May 4, 1978.

Focuses on comparisons of manufacturing trends, emphasizing differences in concepts underlying the data. Discusses long-term rates from 1960 forward, as well as comparative productivity levels.

5.20 Mark, Jerome, and others. *Comparative Growth in Manufacturing Productivity and Labor Costs in Selected Industrialized Countries.* U.S. Department of Labor, Bureau of Labor Statistics. Bulletin 1958. Washington, U.S. Government Printing Office, 1977. 72 pp.

The authors discuss trends, as well as shifts within countries and comparative productivity levels. They present a large number of statistical series.

5.21 Mieczkowski, Bogdan. *Personal and Social Consumption in Eastern Europe: Poland, Czechoslovakia, Hungary, and East Germany.* New York, Praeger, 1975. 342 pp.

Deals primarily with improvements in the standard of living in the three countries, but major conclusions of the study are related to productivity. Finds that rises in real wages have been smaller than increases in labor productivity.

5.22 Pratten, C.F. *Labour Productivity Differentials within International Companies.* DAE Occasional Paper No. 50. Cambridge; New York and Melbourne, Cambridge University Press, 1976. 118 pp.

Compares the domestic labor productivity in the United Kingdom with the overseas operations of these same companies. Also compares the performance of American, French, German, and British companies. Explains the differences, and suggests several ways to increase productivity, including narrowing of the range of products, and long production runs.

5.23 U.K. National Institute of Economic and Social Research. *The United Kingdom Economy.* Brussels, Commission of the European Communities, 1975. 155 pp.

Traces British economic trends from the beginning of the century to 1973, providing a background for the analysis of economic issues in the 1960's and 1970's.

5.24 United Nations. *Industrial Development Organization. Machine Tools in Asia and the Pacific.* New York, 1975. 67 pp.

Presents a review of world demand for cutting and forming tools, as well as country reports on the state of the industry. Also discusses numerical controls, programming, and other technological developments.

5.25 U.S. Central Intelligence Agency, Office of Economic Research. *Research Aid: Ruble-Dollar Ratios for Construction.* ER 76-10068. Washington, D.C., Library of Congress, 1976. 70 pp.

Compares Soviet and U.S. construction costs in 1970 by computing price relatives for various projects. Computes ruble-dollar ratios for housing, office buildings, transportation, schools, and hospitals.

5.26 U.S. Congress, Joint Economic Committee. *Soviet Economy in A New Perspective.* A Compendium of Papers. Committee Print. 94th Congress, 2d Session, October 14, 1976. Washington, U.S. Government Printing Office, 1976. 821 pp.

The papers cover such topics as agriculture, the defense burden, energy, industry, research, trade, and foreign aid.

5.27 Waelbroeck, J., editor. *The Models of Project LINK.* Contributions to Economic Analysis No. 102. New York, Elsevier North-Holland, 1976. 409 pp.

The authors present economic models for 13 nations and attempt to link the models to analyze worldwide economic changes. They present simulations, such as the trend in gross world product.

Factors affecting productivity change

Work force characteristics and education

6.1 Abu-Laban, B., and Abu-Laban, S.M. "Education and Development in the Arab World." *Journal of Developing Areas,* Vol. 10, No. 3, April 1976, pp. 285-304.

The authors contend that application of models initiated in the West places unwarranted confidence in the contribution of education to economic development.

6.2 Adkins, Douglas L. *The Great American Degree Machine. An Economic Analysis of the Human Resource Output of Higher Education.* A Technical Report Sponsored by the Carnegie Commission on Higher Education. Berkeley, 1975. 663 pp.

Presents estimates of the degree-holding population and evaluates the quality of the data. Analyzes degree conferrals in terms of their growth, structure, and sex and age group distribution.

6.3 Akin, John S., and Garfinkel, Irwin. "School Expenditures and the Economic Returns to Schooling." *Journal of Human Resources,* Vol. 12, No. 4, Fall 1977, pp. 460-81.

The authors develop models relating per pupil school expenditures to achievement, verbal ability, years of schooling, and earnings. They find that rates of return to increases in per-pupil expenditures are high for whites and very high for blacks.

6.4 Alper, Neil O. *The Impact of the Cognitive and Noncognitive Aspects of Education on Skilled Workers. A Case Study.* Doctoral dissertation presented to the University of Pittsburgh, 1977. Pp not indicated.

Examines impact of formal and informal education on workers' productivity and earnings. Finds mental ability, socioeconomic background, father's schooling, and other variables contribute to cognitive as well as social skills. Also finds lifetime earnings to be related to these skills.

6.5 Ashenfelter, O.C. "Estimating the Effect of Training Programs on Earnings." *Review of Economics and Statistics,* Vol. 60, No. 1, February 1978, pp. 47-57.

Links government trainee program records with social security earnings history. Finds that training programs have been reasonably effective.

6.6 Bamba, Hiroya. *Relationship Between the Structure of the Labor Market and Demand for Education by Young Black and White Males.* Doctoral dissertation presented to the University of Massachusetts, 1977. 285 pp.

Argues that differences in educational attainment between young black and white males are largely traceable to differences in returns to education.

6.7 Banister, Eric W. "Health, Fitness, and Productivity." *Labour Gazette* (Canada), Vol. 78, No. 9, September 1978, pp. 400-407.

Argues for the provision of fitness and recreation programs at the workplace. Examines the effectiveness of such programs in improving productivity and lowering costs of "unfitness."

6.8 Barbash, Jack. *Work in a Changing Industrial Society.* Final report on an international conference convened by the OECD. Paris, Organisation for Economic Co-operation and Development, 1975. 54 pp.

Synthesizes papers dealing with the sociotechnical arrangements needed to achieve greater humanization of work. Discusses such topics as the labor market in post-industrial society, and organizational ethics.

6.9 Baugher, Dan. "Is the Older Worker Inherently Incompetent?" *Aging and Work,* Vol. 1, No. 4, Fall 1978, pp. 243-50.

Summarizes findings on age-related changes in psychological processes affecting worker performance. Finds declines in performance slight, except in physically demanding jobs. Also finds declines in general intellectual ability minimal. Recommends altering occupational tasks, especially those involving memory.

6.10 Belitsky, A. Harvey. *Productivity and Job Security: Case Studies of Continuing Education for Engineers, Technicians, and Managers.* National Center for Productivity and Quality of Working Life, Washington, U.S. Government Printing Office, Spring 1978. 44 pp.

Tries to determine whether adjustment to new technologies can be facilitated if employees undergo continuing training and education associated with their jobs.

6.11 Belitsky, A. Harvey. *Productivity and Job Security: Retraining to Adapt to Technological Change.* National Center for Productivity and Quality of Working Life, Washington, U.S. Government Printing Office, Winter 1977. 110 pp.

Considers the advantages and disadvantages of different kinds of training. Details successful cases of retraining for new technologies when advance notice of technological change is provided.

6.12 Best, Fred, and Stern, Barry. "Education, Work, and Leisure: Must They Come in that Order?" *Monthly Labor Review,* Vol. 100, No. 7, July 1977, pp. 3-10.

The authors argue that work sharing and "cyclic" life plans would lessen mounting pressures to provide the young and the elderly with jobs, while enabling workers in mid-career to enjoy more free time. They present much data to support their views.

6.13 Birnbaum, H. "Career Origins, On-The-Job Training, and Earnings." *Southern Economic Journal,* Vol. 42, No. 4, April 1976, pp. 587-99.

Argues that the failure to account correctly for on-the-job training overstates the returns to education.

6.14 Birtig, G. "Employment Problems and the Educational System in Italy." *International Labour Review,* Vol. 114, No. 1, July-August 1976, pp. 11-26.

Inquires into reasons why secondary and university graduates suffer high employment. Traces it to changing structures of employment, and strong demand for higher education, itself the outcome of job shortages. Also examines changing educational standards of the labor force.

6.15 Bishop, John H. *Queuing for Union Jobs and the Social Return to Schooling.* Madison, Institute for Research on Poverty, University of Wisconsin, 1976. 38 pp.

Investigates wage/salary differentials which, but for the labor market power of unions, would favor college graduates. Also deals with the effect of labor shortages on these differentials.

6.16 Blaug, M. "The Empirical Status of Human Capital Theory: A Slightly Jaundiced Survey." *Journal of Economic Literature,* Vol. 14, No. 3, September 1976, pp. 827-55.

Discusses, first, the basic methodological approach to human capital theory in terms of its foundation in individual behavior. Reviews this approach for secondary education and labor training. Proceeds to review the findings of prominent theorists in the field. Also discusses findings on private and social rates of return and the earnings function. Finally reviews the screening hypothesis as a rival theory.

6.17 Blinder, Alan S., and Weiss, Yoram. "Human Capital and Labor Supply: A Synthesis." *Journal of Political Economy,* Vol. 84, No. 3, June 1976, pp. 449-472.

The authors analyze the joint determination of work and investment in human capital over the life cycle. They distinguish between low and high rates of "impatience," finding that high impatience makes for increasing work hours and schooling spread beyond the beginning of life.

6.18 Bliss, Ann A., and Cohen, Eva D., eds. *The New Health Professionals. Nurse Practitioners and Physicians' Assistants.* Germantown, Md., Aspen Systems, 1977. 451 pp.

A collection of papers discussing the current status of health professionals; the need to investigate clinical outcomes; and the contribution to future systems of health care, particularly in a system of national health insurance.

6.19 Bloch, Farrel E., and Smith, Sharon P. *Human Capital and Labor Market Employment.* Princeton University, Industrial Relations Section, Working Paper No. 82, December 1975. 12 pp.

The authors investigate the relation between labor market employment and various indicators of human capital.

6.20 Blumberg, Melvin. *Job Switching in Autonomous Work Groups. A Descriptive and Explorative Study of an Underground Coal Mine.* Doctoral dissertation submitted to The Pennsylvania State University, 1977. 309 pp.

Finds job switching to be related to the demands of the technical system rather than to social and psychological needs. Also finds it to be associated with task identity, and negatively related to age, status, job satisfaction, and other variables.

6.21 Boisvert, Maurice P. "The Quality of Working Life: An Analysis." *Human Relations,* Vol. 30, No. 2, 1977, pp. 155-60.

Explores differences between workers' and researchers' concepts. Finds that, for the former, work quality is intrinsic to work aspects, while for the latter it extends beyond, to organizational and career aspects. Warns against resultant analytical pitfalls.

6.22 Bowles, Samuel. *Schooling in Capitalist America. Educational Reform and the Contradictions of Economic Life.* New York, Basic Books, 1976. 340 pp.

Deals with the relation of education to the structure of economic life, and the bearing of this relation upon personal development. Discusses education change, and its linkages with capital accumulations and white-color employment.

6.23 Braddock, Douglas. "The Oversupply of Ph. D.'s to Continue through 1985." *Monthly Labor Review,* Vol. 101, No. 10, October 1978, pp. 48-50.

Presents projections of requirements, together with estimates of the number of expected graduates and of Ph. D.'s currently employed in "nontraditional" jobs.

6.24 Buchele, Robert K. *Jobs and Workers: A Labor Market Segmentation Perspective on the Work Experience of Young Men.* Doctoral dissertation presented to Harvard University, 1976. 211 pp.

Examines unemployment, labor force participation, job tenure, turnover, job satisfaction, and other variables in terms of the labor market segmentation approach. Finds that personal traits such as race and marital status outweigh human capital in importance, and that labor market outcomes are shaped by institutions which define job content and circumstances of employment in different job classes.

6.25 Buchholz, Rogine A. "The Work Ethic Reconsidered." *Industrial and Labor Relations Review,* Vol. 31, No. 3, July 1978, pp. 450-59.

Reporting on a survey, the author finds that the values of individualism and hard work received least support among surveyed persons, while the "humanistic" belief system—stressing personal fulfillment at work and a supportive social environment—received most support.

6.26 Burstein, M., and others. *Canadian Work Values. Findings of a Work Ethic Survey and a Job Satisfaction Survey.* Ottawa, Department of Manpower and Immigration, 1975. 104 pp.

The authors investigate work attitudes, particularly of younger workers and women, premising their investigation on high unemployment rates attributed frequently to changing values of work and lack of creative jobs.

6.27 Cain, Glen G. "The Challenge of Segmented Labor Market Theories to Orthodox Theory: A Survey." *Journal of Economic Literature,* Vol. XIV, No. 4, December 1976, pp. 1215-57.

After classifying the issues raised in the literature—e.g., the persistence of poverty and of income inequality—the author critically reviews the major theories, such as job competition, dual labor markets, and radical approaches. He also offers a historical perspective, discussing institutional and structuralist theories. He then presents an analysis of the modern neoclassical response, and shows how this response deals with specific issues, e.g., occupational mobility, discrimination, and unemployment.

6.28 Carey, Max L. "Revised Occupational Projections to 1985." *Monthly Labor Review,* Vol. 99, No. 11, November 1976, pp. 10-22.

Projects especially strong growth for white-collar and service workers. Discusses assumptions and alternative projections, as well as implications for training.

6.29 Carnoy, M., and Marenbach, D. "The Return to Schooling in the United States, 1939-69." *Journal of Human Resources,* Vol. 10, No. 3, Summer 1975, pp. 312-31.

The authors estimate rates of return to investment in schooling, in census years, by sex and race. One of their findings is that rates for whites' high school investment declined in the 30-year period.

6.30 Carone, Pasquale A., ed. *Women in Industry.* Proceedings of a conference held April 8-9, 1976. Albany, State University of New York Press, 1977. 255 pp.

The discussants examine such subjects as women in labor organizations and in the health professions. They also examine career choices of women.

6.31 Chiriboga, Douglas Arthur. *The Demand for Medical Care. A Health Capital Approach.* Doctoral dissertation presented to the University of Massachusetts, 1977. 127 pp.

Treats the subject as part of human capital theory and in terms of consumer allocation of nonworking time. Also presents a case for public intervention in the health insurance market to achieve economies of scale.

6.32 Ciba Foundation. *Health and Industrial Growth.* Ciba Foundation Symposium 32 (new series). New York, American Elsevier 1975. 267 pp.

A collection of papers discussing the second-order effects of industrial growth on health. Social and environmental effects are also discussed.

6.33 Craft, James A., and Birnberg, Jacob G. "Human Resource Accounting: Perspective and Prospects." *Industrial Relations,* Vol. 15, No. 1, February 1976, pp. 2-12.

The authors examine new approaches that have been suggested to measure human assets. They emphasize such uses as evaluating managerial performance.

6.34 Cummings, Thomas, and Molloy, Edmond S. *Improving Productivity and the Quality of Work Life.* New York, Praeger, 1977. 305 pp.

The authors investigate the theories underlying certain strategies, including autonomous work groups, job restructuring, participative management, organization change and behavior modification, flexible work hours, and the Scanlon plan. They assess a large number of pertinent work experiments.

6.35 Dahlberg, Ake. "Incentives to Increase the Geographic Mobility of Labor—Overconfidence in Profitability." *Annals of Regional Science,* Vol. 11, No. 3, Nov. 1977, pp. 81-93.

Evaluates incentives for underemployed persons to migrate, and pertinent cost-benefit studies. Finds profitability of migration to be much lower than usually assumed.

6.36 Dauterive, Jerry W. *Human Capital and Labor Market Structure. A Study of Interpersonal Differences in Wages Among Mature Career Women.* Doctoral dissertation submitted to Texas Tech University, 1976. 171 pp.

Hypothesizes that interpersonal wage rate differentials and the wage gap between races are independent of investment in human capital and labor market structure. Finds that levels of human capital are in fact determinants of wages, and that interpersonal wage differences were determined by local labor market characteristics.

6.37 Dickson, Paul. *The Future of the Workplace. The Coming Revolution in Jobs.* New York, Weybright & Talley, 1975. 378 pp.

Deals with the tendency toward democracy in the workplace. Discusses job enrichment, Scandinavian industrial democracy, changes in the workweek, and self-employment. Also examines job design on the basis of case studies, and related experiments.

6.38 Dresch, S.P. "Demography, Technology, and Higher Education: Toward a Formal Model of Educational Adaptation." *Journal of Political Economy,* Vol. 83, No. 3, June 1975, pp. 535-69.

The authors deal with educational adaptation and the process by which the educational composition of the adult population is modified in response to changes in technology and the economy.

6.39 Dresch, Stephen P. "Human Capital and Economic Growth: Retrospect and Prospect." In *U.S. Economic Growth from 1976 to 1986: Prospects, Problems and Patterns.* Vol. 11 - *Human Capital.* Studies Prepared for the Use of the Joint Economic Committee, U.S. Congress, May 24, 1977. Washington, U.S. Government Printing Office, pp. 112-53.

Explores whether increases in educational attainment will continue to result in increases in national income comparable to findings for growth accounting. Also investigates the historical and future relation between education and personal income.

6.40 Edwards, Edgar O. "Investment in Education in Developing Nations: Policy Responses when Private and Social Signals Conflict." *World Development,* Vol. 3, No. 1, January 1975, pp. 41-45.

Argues that the net private benefit of higher education is higher than its net social benefit in most developing countries, contributing to favoring of investment in education over generating employment opportunities.

6.41 Edwards, R.C. "Individual Traits and Organizational Incentives: What Makes a "Good" Worker?" *Journal of Human Resources,* Vol. 11, No. 1, Winter 1976, pp. 51-68.

Investigates the worker attributes and behavior rewarded in the large enterprise. Assigns importance to boss-worker relations, as opposed to the neoclassical stress on people-nature relations.

6.42 Engelen-Kiefer, Ursula, "Humanisation of Work in the Federal Republic of Germany: A Labour-Oriented Approach." *International Labour Review,* Vol. 113, No. 2, March-April 1976, pp. 227-41.

Argues that humanization of work should include workers' personal development and participation in decisionmaking, and not merely ergonomic considerations. Also holds that workers' representatives must be involved in management projects dealing with working conditions.

6.43 Fane, G. "Education and the Managerial Efficiency of Farmers." *Review of Economics and Statistics,* Vol. 57, No. 4, November 1975, pp. 452-61.

Estimates managerial efficiency by comparing actual expenditures on inputs with a hypothetical minimum, calculated from factor prices and production function parameters. Finds, for given sizes of farms, that farmers with above average education operate more efficiently than average.

6.44 Fleisig, H.W. "Slavery, the Supply of Agricultural Labor, and the Industrialization of the South." *Journal of Economic History,* Vol. 36, No. 3, September 1976, pp. 572-97.

Shows the conditions under which slavery would raise the share of agriculture in total output while reducing the size of the market for new farm machinery and the incentive to invent such machinery.

6.45 Flueckiger, G.E. "Specialization, Learning by Doing and the Optimal Amount of Learning." *Economic Inquiry,* Vol. 14, No. 3, September 1976, pp. 389-409.

Shows connections between specialization, learning by doing, and optimal amount of learning. Shows how optimal amount of learning may be determined.

6.46 Freeman, Richard B. *The Overeducated American.* New York; San Francisco and London, Harcourt Brace Jovanovich, Academic Press, 1976. 218 pp.

Analyzes job market for college-educated people and the reasons for its depressed state. Forecasts trends, concluding that the economic position of males with new bachelor's degrees will not improve until the early 1980's.

6.47 Freeman, R.B. "Overinvestment in College Training?" *Journal of Human Resources,* Vol. 10, No. 3, Summer 1975, pp. 287-311.

Examines the quantitative dimensions, causes, and consequences of the downturn in the job market for college graduates.

6.48 Freeman, R.B. "Job Satisfaction as an Economic Variable." *American Economic Review,* Vol. 68, No. 2, May 1978, pp. 135-41.

Finds satisfaction to be a major determinant of labor market mobility, reflecting aspects of the workplace not captured by standard analytical variables.

6.49 Fritschner, Linda M. "Women's Work and Women's Education: The Case of Home Economics, 1870-1920." *Sociology of Work and Occupations,* Vol. 4, No. 2, May 1977, pp. 209-34.

Questions the theory which postulates a direct connection between expansion of an educational program (such as home economics) and expansion in the occupation to which the program applies. Argues that home economics programs were largely aimed at stalling the movement of women into paid employment.

6.50 Froehlich, Joachim William. *Industrial Training and Productivity. Case Study of a Firm in the Rubber Industry.* Doctoral dissertation presented to The Catholic University of America, 1977. 155 pp.

Attempts to determine the benefits an employer gains from training prospective workers. Finds that personal characteristics are unrelated to improved efficiency, that training reduces turnover, and that productivity improves.

6.51 Fullerton, Howard N., and Byrne, James J. "Length of Working Life for Men and Women, 1970." *Monthly Labor Review,* Vol. 99, No. 2, February 1976, pp. 31-35.

The authors find that years spent in the labor force have declined for men, risen for women.

6.52 Gardell, Bertil. "Reactions at Work and Their Influence on Nonwork Activities. An Analysis of a Socio-Political Problem in Affluent Societies." *Human Relations,* Vol. 29, No. 9, 1976, pp. 885-904.

Argues that conventional ways of organizing work conflict with creative needs. Analyzes the adverse effects of this conflict upon work satisfaction and labor market behavior, and participation in cultural and educational activities. Advocates shorter work hours, flexible career patterns, and more flexible relations between work, family, and nonwork activities.

6.53 Garson, Barbara. *All the Livelong Day. The Meaning and Demeaning of Routine Work.* New York, Penguin Books, 1977. 221 pp.

Basing her study mainly on interviews, the author examines the way people cope with routine and monotonous work. Finds, along with resentment and boredom, an urgent desire for accomplishment.

6.54 Gilroy, C.L. "Investment in Human Capital and Black-White Unemployment." *Monthly Labor Review,* Vol. 98, No. 7, July 1975, pp. 13-21.

Shows that greater unemployment among blacks is due in large part to their overall lower levels of educational attainment and academic achievement.

6.55 Ginzberg, Eli. *The Human Economy.* New York, McGraw-Hill, 1976. 274 pp.

Analyzes the chief institutions and mechanisms shaping the development and utilization of manpower. Examines differences in acquiring skills, differences in affording employment opportunities, and related topics.

6.56 Ginzberg, Eli. *The Manpower Connection: Education and Work.* Cambridge, Harvard University Press, 1975. 258 pp.

Discusses occupational choice, career education, educational planning, and related subjects. Also examines worker discontent and the quality of working life, holding that reform of the workplace will meet with but limited success. Other essays treat science policy and employment implications of Federal budgeting decisions.

6.57 Glaser, Edward M. *Productivity Gains through Worklife Improvements.* Harcourt Brace, New York, 1976. 342 pp.

Presents research findings on quality of worklife programs. Discusses changing orientations toward worklife, the organization of work, worker motivation, and other pertinent subjects. Case studies include a wide variety of firms.

6.58 Gleason, Sandra E. *A Benefit-Cost Analysis of Institutional Training Programs in Michigan Prisons.* Doctoral dissertation presented to Michigan State University, East Lansing, 1978. 168 pp.

Explores the impact of prison vocational training programs on post-release job opportunities. Finds that impact to be favorable for technologically advanced programs, less so for clerical, operative, and service worker skills; and that benefit-cost ratios were highly favorable for the former group.

6.59 "GM's Quality of Work Life Efforts. An Interview with Howard C. Carlson." *Personnel*, Vol. 55, No. 4, July/August 1978.

Describes a quality-of-worklife questionnaire used in measuring progress in job satisfaction. Also discusses union-management agreements on quality of worklife and innovations furthering it.

6.60 Goldstein, Harold M. and Horowitz, Morris A. *Entry-Level Health Occupations. Development and Future.* Baltimore, Johns Hopkins University Press, 1977. 100 pp.

The authors argue that the health care industry affords expanding employment opportunities, but that employment access is limited by requirements for education, experience, and training which tend to exclude especially workers from disadvantaged groups. They discuss characteristics of health personnel, implications of licensing and certification, and related topics.

6.61 Grasso, John T. *The Contributions of Vocational Education, Training and Work Experience to the Early Career Achievements of Young Men.* Columbus, Ohio, Center for Human Resource Research, Ohio State University, 1975. 150 pp.

Examines the role of the secondary school and other training in preparing youth for careers. Compares graduates from various high school curricula and concludes that vocational school students are not better prepared for work than students in the general schools.

6.62 Gutman, Herbert G. *Work, Culture and Society in Industrializing America. Essays in American Working Class and Social History.* New York, Alfred Knopf, 1976. 343 pp.

Explores beliefs and behavior of American working people during the 19th century. Discusses such themes as Protestantism, the industrial city, black coal miners, and labor radicalism in the Gilded Age.

6.63 Gutteridge, Thomas G. "Labor Market Adaptations of Displaced Technical Professionals." *Industrial and Labor Relations Review*, Vol. 31, No. 4, July 1978, pp.460-73.

Finds that displaced professionals, after a sustained period of unemployment, were more willing to change occupations than initially, and that salary aspirations also changed.

6.64 Hadley, Lawrence H. "The Migration of Egyptian Human Capital to the Arab Oil-Producing States: A Cost-Benefit Analysis." *International Migration Review*, Vol. 11, No. 3, Fall 1977, pp. 285-99.

Argues that the rate of return to Egyptian nationals migrating to Arab oil-producing states is very high. Evaluates export of human capital from a less developed country in terms of Egypt's experience.

6.65 Hardin, Einar. *Psychological and Human Capital Influence upon the Salaries of White Collar Workers.* East Lansing, School of Industrial and Labor Relations, Michigan State University, 1978. 76 pp.

Augments human capital theory as an explanatory variable in salary differentials by measures of "raw ability," including openmindedness, readiness for change, commitment to work. Assumes that employees who have these characteristics would draw more pay than employees who do not, although endowed with an equal stock of human capital.

6.66 Hartog, Joop. "Ability and Age-Income Profiles." *Review of Income and Wealth,* Series 22, No. 1, March 1976, pp. 61-74.

Argues that capabilities are the key variables in the labor market, with individual preferences guiding job choice. Finds that capability development explains the age-income profiles.

6.67 Harvey, Bruce S., and Kagerer, Rudolph L. "Marginal Workers and their Decisions to Work or to Quit." *The American Journal of Economics and Sociology,* Vol. 35, No. 2, April 1976, pp. 137-47.

Surveying poultry processing plant workers, the authors find cumulative discontent with employment and the work setting. They argue for modification of the job structure and development of the human aspect of management.

6.68 Herschede, Alfred J. *Investments in Education and Economic Growth in the People's Republic of China.* Doctoral dissertation submitted to the University of Illinois, 1976. 229 pp.

Discusses education under Chinese communism, and Marxist interpretations of the relation between education and economic growth. Analyzes educational practices since 1949 in terms of those interpretations. Finds that costs of educational investments outweighted benefits in terms of growth, the time it takes to learn having been underestimated.

6.69 Herzberg, Frederick. "The Human Need for Work." A Four-Part Series. *Industry Week,* Vol. 198, No. 2-5. "Putting People Back Together." July 24, 1978, pp. 49-52. "The Dynamics of Caring." August 7, pp. 61-64. "Careerists, Accomplishers, and the Obsolete." August 21, pp. 57-62. "Participation is not a Motivator." September 4, pp. 38-44.

Stresses work as the chief source of personal satisfaction, and the need to provide opportunities in order to motivate. Distinguishes between the "accomplisher", who regards work as integral to his life, and the "careerist," who divorces his work from personal values. Finally, discusses participation and job design, emphasizing that they are not necessarily related to productivity.

6.70 Howe, Louise Kapp. *Pink Collar Workers. Inside the World of Women's Work.* New York, Putnam, 1977. 301 pp.

Focusing on noncollege women, the author examines their occupations and reasons for entering them. She concentrates on five traditional female occupations—beauticians, sales women, waitresses, clerical workers, and homeworkers.

6.71 Huffman, W.E. "Allocative Efficiency: The Role of Human Capital." *Quarterly Journal of Economics,* Vol. 91, No. 1, February 1977, pp. 59-79.

Examines whether investment in education and extension services improves the performance of U.S. cornbelt farmers. Concludes that response to changing economic conditions requires allocative ability acquired by investment in useful information and education.

6.72 International Labour Office. *Report on the Vocational Training System Workshop.* Amman, Jordan, Feb. 7-10, 1977. Geneva, 1977. 44 pp.

Reports on the implementation of the ILO-developed training system of modules of employable skills in Middle Eastern countries. Features a detailed expanation of the principles underlying the system.

6.73 Ippolito, Richard A. "The Division of Labor in the Firm." *Economic Inquiry,* Vol. 15, No. 4, October 1977, pp. 469-92.

Following Adam Smith's theory of labor specialization, the author develops a human capital model to derive relationships to test the theory. Finds strong support for Smith's theory in an examination of the U.S. shipbuilding industry during World War II.

6.74 Jackall, Robert G. *Workers in a Labyrinth. Jobs and Survival in a Bank Bureaucracy.* Montclair, N.J., Allanheld, Osmun, 1977. 190 pp.

Presents a survey of attitudes of clerical workers towards their work, and of the influence of these attitudes upon their lives generally. Discusses the relation of the surveyed workers to the organization in terms of security, status and advancement, and other factors.

6.75 Jaffe, A.J., and Froomkin, Joseph. "Occupational Opportunities for College-Educated Workers, 1950-75." *Monthly Labor Review,* Vol. 101, No. 6, June 1978, pp. 15-21.

The authors investigate comparative salaries of college-educated workers in the seventies, and changes in job opportunities. They also explore the kinds of jobs opening up.

6.76 Jones, Dallas, ed. "Controlling Absenteeism for Enhanced Productivity and Lower Labor Costs." in *Horizons of Industrial Productivity.* Industrial Development Division, Ann Arbor, Institute of Science and Technology, The University of Michigan, 1977, pp. 33-45.

Argues that reducing absenteeism and, at the same time, lowering labor costs, may be as important as raising productivity through the use of new equipment. Recommends that enterprises improve their data on absenteeism.

6.77 Kalachek, E., and others. "The Male Labor Supply Function Reconsidered." *Industrial and Labor Relations Review,* Vol. 31, No. 3, April 1978, pp. 356-67.

The authors find that most mature males who are unemployed want to work, and that variation in labor supply results largely from variations in attitudes, health, and demographic factors, not variation in wages.

6.78 Kazanas, H.C. "Relationship of Job Satisfaction and Productivity to Work Values of Vocational Education Graduates." *Journal of Vocational Behavior,* Vol. 12, No. 2, April 1978, pp. 155-64.

Based on survey results, the author finds that workers with intrinsic work value orientation are more satisfied with their jobs, and more productive, than workers with extrinsic orientation.

6.79 King, A.G., and Knapp, C.B. "Race and the Determinants of Lifetime Earnings." *Industrial and Labor Relations Review,* Vol. 31, No. 3, April 1978, pp. 347-55.

The authors find that education and postschool investment in training are important determinants of lifetime earnings but that socioeconomic background affects lifetime earnings only indirectly through its initial impact on education.

6.80 Klevmarken, A., and Quigley, J.M. "Age, Experience, Earnings and Investments in Human Capital." *Journal of Political Economy,* Vol. 84, No. 1, February 1976, pp. 47-72.

Based on 10-year data on the earnings of cohorts with identical engineering education qualifications, the authors find that younger members of the same experience cohort are more efficient in producing human capital.

6.81 Kniesner, Thomas J., and others. "The Rate of Return to Schooling and the Business Cycle." *Journal of Human Resources,* Vol. 51, No. 2, Spring 1978, pp. 264-77.

The authors argue that the business cycle affects rate-of-return estimates by way of changing the composition of employment and the structure of wages; and that the degree to which the increased relative rate of return to black workers is attributable to comparative gains in quality of schooling may be overstated.

6.82 Knox, Alan B. *Adult Development and Learning.* San Francisco, Jossey-Base, 1977. 679 pp.

Discusses the performance of adults in family, work, and community roles; their physical condition and personality, their learning of new competencies; and other aspects.

6.83 Kolb, David A. "Management and the Learning Process." *California Management Review,* Vol. 18, No. 3, Spring 1976, pp. 21-31.

Points out that the most successful managers and administrators become proficient in the changing requirements of their jobs and careers through their ability to learn. Presents an experimental learning model and analyzes various learning styles.

6.84 Krimpas, G. *Labour Input and the Theory of the Labour Market.* New York, John Wiley, 1975. 288 pp.

Defines labor input in terms of the economic decisions involved in resource allocation, and discusses associated measurement problems. Discusses methods of field work related to labor inputs. Reports on practical aspects of work measurement.

6.85 LaBerge, Roy. "Making Work More Human." *Labour Gazette.* Vol. 77, No. 11, Nov. 1977, pp. 485-91.

Discusses pilot projects to improve the quality of working life in the Federal government of Canada as well as among private businesses. Points to lower absenteeism and worker turnover, and higher productivity.

6.86 Lawler, Edward E., and Drexler, John A. "Dynamics of Establishing Cooperative Quality-of-Worklife Projects." *Monthly Labor Review,* Vol. 101, No. 3, March 1978, pp. 23-28.

The authors first determine the forces which favored, and which opposed, joint projects, and analyze the reasons for support or opposition to these projects. They then discuss the conditions conducive to the projects, and, finally, the results obtained.

6.87 Lecht, Leonard A. *Occupational Choices and Training Needs. Prospects for the 1980's.* New York, Praeger, 1977. 203 pp.

Discusses growth in occupations not usually requiring a college degree. Assesses economic returns, and characteristics of persons employed in such occupations. Relates occupational growth and vocational school enrollment.

6.88 Leepson, Marc. *Medical Education.* Washington, Editorial Research Reports, 1977, pp. 891-908.

Traces the evolution of medical studies in the United States. Discusses changing admission procedures and foreign training of doctors. Emphasizes the large demand for medical education in the United States and the impact of medical schools in shaping health care.

6.89 Leigh, Duane, E. "The Occupational Mobility of Young Men, 1965-1970." *Industrial and Labor Relations Review,* Vol. 30, No. 1, October 1976, pp. 68-78.

Examines differences in formal education and training to evaluate differences in occupational advancement between whites and blacks. Also examines the impact of labor market segmentation on advancement.

6.90 Leiter, Robert D., ed. *Costs and Benefits of Education.* Annual Volume of the Department of Economics, City College of the City University of New York, Vol. 1. Boston, G.K. Hall, Twayne, 1975. 215 pp.

The authors attempt to determine the effects of educational expenditures on future earnings and productivity of the individual and the economy. They examine allocation of funds between lower and higher education; application of linear programming to the process of resource allocation at the university level; prediction of expenditures; enrollment in vocational programs; and educational opportunity costs.

6.91 Levitan, Sar A., and others. *Human Resources and Labor Markets.* New York, Harper & Row, 1976. 613 pp.

A text dealing with the dynamics and institutions of the labor market, preparation for employment, remedial manpower program, minority income and employment, and manpower and economic policy.

6.92 Levitan, Sar A., and Alderman, Karen C. *Warriors at Work. The Volunteer Armed Force.* Beverly Hills, Sage Publications, 1977. 216 pp.

The authors discuss means used by the military services to attract needed manpower; compensation practices; training and education provided; and the responsibilities assumed for those who leave the service.

6.93 Lewis, W. Cris. "The Role of Age in the Decision to Migrate." *Annals of Regional Science,* Vol. 11, No. 3, November 1977, pp. 51-60.

Developing a theoretical model, the author argues that, as worklife expectancy, of a family head declines, the period to benefit from migrating shortens, and the present value of benefits declines.

6.94 Link, C.R. "Graduate Education, School Quality, Experience, Student Ability, and Earnings." *Journal of Business*, Vol. 48, No. 4, October 1975, pp. 477-91.

Estimates earnings determinants for a sample of male electrical engineers who received a graduate school education. Finds that returns to education are grossly understated if controls for experience are left out of the model.

6.95 Lloyd, Cynthia B., ed. *Sex, Discrimination, and the Division of Labor*. New York and London, Columbia University Press, 1975, 431 pp.

A collection of essays on female participation rates, female-male unemployment differentials, the female-male earnings gap, and women's nonmarket activities.

6.96 Long, James E. "Employment Discrimination in the Federal Section." *Journal of Human Resources*, Vol. 11, No. 1, Winter 1976, pp. 86-97.

Compares the earnings and employment of Federal workers having similar productivity characteristics, but differing in race or sex. Finds that, after adjusting for productivity differentials, earnings and employment opportunities in the Federal service vary by race and sex.

6.97 Long, James E. "Productivity, Employment Discrimination, and the Relative Economic Status of Spanish Origin Males." *Social Science Quarterly*, Vol. 58, No. 3, Dec. 1977, pp. 357-373.

Argues that employment discrimination and/or lower productivity may explain differences in employment and earnings between white males and males of Spanish origin. Also argues that the severity of discrimination differs among occupations.

6.98 Lowinger, Thomas C. "Human Capital and Technological Determinants of U.S. Industries' Revealed Comparative Advantage." *Quarterly Review of Economics and Business*, Vol. 17, No. 4, Winter 1977, pp. 91-102.

Analyzes U.S. export performance in relation to the stock of knowledge embodied in the exporting industries and their human capital. Also deals with changes over time in U.S. export performance.

6.99 Lusterman, Seymour. *Education in Industry*. New York, The Conference Board, 1977, 97 pp.

Presents a survey of the aims, approaches, and scope of educational efforts undertaken by major corporations. Discusses staffing and organization, use of outside resources, after-hours and during-hours programs and their prevalence, and the relation between companies and schools. Presents several case studies.

6.100 Mace, J.D., and Taylor, S.M. "The Demand for Engineers in British Industry: Some Implications for Manpower Forecasting." *British Journal of Industrial Relations*, Vol. 13, No. 2, July 1975, pp. 175-93.

The authors test the usefulness of the manpower requirements approach to educational planning. They find that the labor market for engineers affords considerable opportunity for substitution between labor inputs.

6.101 Machlup, Fritz. *Education and Economic Growth*. New York, New York University Press, 1975, 106 pp.

Discusses the contributions of education, the increasing demand for education, and the increasing cost of education caused by growth and inflation.

6.102 Maier, Dorothea, and Loeb, Harold. *Training and Work Experience of Former Apprentices, New York State*. New York, New York State Department of Labor, 1975. 199 pp.

Based on a survey of completers and dropouts, the authors find that a high ratio of former apprentices were working in the trades for which they had been trained, and that they were working at the journeyman or higher level. Outstanding in training relatedness were plumbers, sheet-metal workers, electricians, and stationary engineers.

6.103 Maurizi, Alex. "Rates of Return to Dentistry and Decision to Enter Dental School." *The*

Journal of Human Resources, Vol. 10, No. 4, Fall 1975, pp. 521-28.

Finds that the rate of return to dentistry, compared with alternative occupations, influences eligible students to apply to dental schools. Believes that many students would consider dentistry an attractive human capital investment, even if full-cost tuition were to be charged.

6.104 McClung, Roger Leroy. *Identification of an Educational Production Function for Diverse Technologies*. Doctoral dissertation submitted to the Washington University, 1976. 211 pp.

Evaluates the cost effectiveness of traditional instruction, instruction by television, and computer-assisted instruction. Examines variations in student performance on the basis of instructional technologies.

6.105 McMahon, Walter W. "Influences on Investment by Blacks in Higher Education." *American Economic Review*, Vol. 66, No. 2, May 1976, pp. 320-23.

Argues that a major influence on the investment in a college education by black males is the expectation of a high rate of return. Finds that greater enrollment in college by black males is primarily constrained by their limited primary and secondary schooling.

6.106 McNeill, William H., and Adams, Ruth S., eds. *Human Migration, Patterns and Policies*. Bloomington, Indiana University Press, 1978. 442 pp.

A collection of papers surveying past and present patterns of migration and the causes of migration; migration policies; and the legal and economic aspects of migration.

6.107 Medoff, Marshall. "Investing in Human Capital: The Lack of Black Apprentices." *Review of Black Political Economy*, Vol. 7, No. 2, Winter 1977, pp. 176-182.

Examines reasons usually advanced, including differences in investment behavior of black workers. Finds that the smaller amount of self-investment by blacks is linked to trade union practices which in some cases exclude individuals on the basis of race.

6.108 Meier, Elizabeth L., and Kerr, Elizabeth A. "Capabilities of Middle-Aged and Older Workers." *Industrial Gerontology*, Vol. 3, No. 3, Summer 1976, pp. 147-56.

The authors survey pertinent literature in reference to physical capacity, learning ability, job performance, performance in training, and work attitudes.

6.109 Meadows, Ian S.G. *Innovative Work Arrangements. A Case Study in Job Enrichment.* Phillips Electronics Ltd., Leaside, Ont. No. 17. Ontario Ministry of Labour, July 1976. 20 pp.

Examines changes in job design and layout to enrich jobs, and the effects of these changes on employees and management. Highlights opportunities for improving work arrangements.

6.110 Mehta, M.M. *Human Resources Development Planning. With Special Reference to Asia and the Far East.* Delhi, Macmillan of India, 1976. 192 pp.

Analyzes the techniques and strategies for human resources planning. Considers the measurement of the contribution of human resources to economic growth; rates of return; forecasting long-term training and educational requirements; and integration of human resources planning with economic development planning.

6.111 Miner, Mary G. *Management Training and Development Programs*. Washington, Bureau of National Affairs, 1977. 36 pp.

Presenting findings from a survey, the author discusses training activities for first-level supervisors, including the most frequently covered topics of in-house programs. She also discusses programs for middle-level managers, which she finds involve outside activities to a much greater extent.

6.112 Mooney, Martha W. *The Employment Behavior of Husbands in Two-Worker Families. An Empirical Investigation.* Doctoral dissertation presented to the University of California at Los Angeles, 1977. 143 pp.

Hypothesizes that, as labor force decisions of husbands and wives shift away from stereotypes of sex roles, husbands' employment decisions in two-worker families will be affected by wives' earnings, in terms of decreasing hours of work.

6.113 Moran, Allen R. "The Economics of Resource Use in Vocational Rehabilitation: A Case Study of Labor Input Allocation." *Public Productivity Review*, Vol. III, No. 2, Summer/Fall 1978, pp. 73-88.

Details the use of computerized information in accounting for staff time. Notes biases introduced when services received by clients, rather than hours expended on the service, are measured.

6.114 National Commission on Manpower Policy. *Conference on Labor Market Intermediaries*. Papers. Report No. 22. Washington, 1978. 372 pp.

The contributors discuss the public employment service; the roles of help-wanted ads, temporary help services, and private employment agencies; and jobseeking behavior.

6.115 National Planning Association. *Upgrading Low-Level Employment: A Major National Challenge*. Washington, 1975. 23 pp.

Inquires into reasons for persistence of low-level jobs, and argues for improvements in labor market adjustments.

6.116 Near, Janet P., and others. "Work and Extra-Work Correlates of Life and Job Satisfaction." *Academy of Management Journal*, Vol. 21, No. 2, June 1978, pp. 248-64.

Reporting on a sample survey, the authors find job satisfaction generally is not a central component of life satisfaction and that factors outside the workplace influence job satisfaction.

6.117 Neff, Walter S. *Work and Human Behavior*. Second edition. Chicago, Aldine, 1977. 332 pp.

Examines the relation between work situations and coping behavior of individuals. Formulates a psychopathology of work to examine the limits of coping behavior. Discusses the relation of work and society, and work and the individual.

6.118 Norman, Victor D. *Education, Learning and Productivity*. Scandinavian University Books. Oslo, Universitetsforlaget, 1976. 102 pp.

Reviews physical investment and human investment theories, and explores the sources of interaction between technical change, learning, and labor productivity in an economywide model. Argues that technological diffusion and educational investment must be seen as intimately related activities.

6.119 Norrblom, Eva M. *An Analysis of the Economic Return to Military and Civilian Training*. Doctoral dissertation submitted to the University of Southern California, 1976. Pp. not indicated.

Argues that investment in civilian or military training significantly raises productivity and wages if individuals can use their skills in the occupations trained for. Finds returns to academic training usually to be overestimated, and returns to on-the-job training underestimated.

6.120 Organisation for Economic Co-Operation and Development. *Education, Inequality and Life Chances*. Vols. I and II. Paris, 1975. 612 pp. and 448 pp.

A collection of papers discussing such topics as income distribution, educational policy, and the impact of education on social mobility and earnings.

6.121 Organisation for Economic Co-Operation and Development. *Entry of Young People into Working Life*. Washington, 1977. 106 pp.

Uses data collected by member countries and finds that problems are partly the result of the mismatch between young people's expectations, their occupational preparation, and the nature of the jobs being offered and prevailing working conditions.

6.122 Ornstein, Michael D. *Entry into the American Labor Force*. New York, Academic Press, 1976. 220 pp.

After critically reviewing previous work on labor force entry, the author examines first jobs obtained by a sample of male entrants, and their occupational mobility directly after entry. Examines mobility processes in terms of race, family, educational background, and previous work experience.

6.123 Osterman, P. "An Empirical Study of Labor Market Segmentation." *Industrial and Labor Relations Review*, Vol. 28, No. 4, July 1975, pp. 508-23.

Presents the dual labor market theory, with three occupational groupings, distinguished by degrees of autonomy and participation at work. Finds that human capital characteristics explain the variance in annual earnings best for the top tier jobs, and moderately well for the lower tier.

6.124 Parnes, Steven. *Highlights of the Literature—Productivity and Quality of Working Life*. Scarsdale, N.Y., Work in America Institute, Inc., 1978. 43 pp.

In addition to reviewing the literature, the author examines the influence of such programs as job design, management by objective, and employee participation.

6.125 Perry, Charles R., and others. *The Impact of Government Manpower Programs: In General, and on Minorities and Women*. Philadelphia, The Wharton School, University of Pennsylvania, 1975. 511 pp.

The authors find that manpower programs have favorably affected the labor market experience of program participants, as shown by higher earnings and greater participation in the labor force. They argue for more skill training.

6.126 Perry, Henry B. *Physician Assistants. An Empirical Analysis of their General Characteristics, Job Performance and Job Satisfaction*. Baltimore, Johns Hopkins University Press, 1976. 359 pp.

Describing a nationwide sample, the author finds physician assistants to be working mostly in primary care specialities and in smaller communities. He found their role acceptance to be high, but their advancement opportunities limited.

6.127 Peterson, Richard B. "Swedish Experiments with Job Reform." *Business Horizons*, Vol. 19, No. 3, June 1976, pp. 13-22.

Notes the differences between American and Swedish job design changes. Lists Swedish organizations engaged in job redesign and discusses results. Also discusses issues that arise on the firm level, as well as trade union and worker-management issues.

6.128 Pettman, Barrie O., ed. *Equal Pay for Women: Progress and Problems in Seven Countries*. Bradford, England, MCB Books, 1975. 173 pp.

A collection of papers arguing that, for women to develop their skills, more education, guidance, and training are necessary, in addition to removal of discrimination.

6.129 Prendergast, Curtis. *Productivity and Quality of Working Life Centers: Conference Report and Directory*. Washington, National Center for Productivity and Quality of Working Life, August 1976. 42 pp.

Presents views of centers and Federal agencies. Concludes that the commitment of labor and management to joint productivity/work quality programs is limited.

6.130 Quinn, Richard F. *Outflow of Human Capital from Ireland. An Aspect of Foreign Aid*. Doctoral dissertation presented to the University of Toronto, 1975. Pp. not indicated.

Notes scarcity of domestic capital as against surfeit of educated persons in Ireland. Examines outflow especially of missionaries who in effect provide technical assistance to developing countries. Argues that religious zeal is but one factor causing such outflow. Estimates its cost to the Irish economy.

6.131 Quinn, Robert P. *Education and Job Satisfaction: A Questionable Payoff*. U.S. Department of Health, Education, and Welfare, National Institute of Education, Washington, March 1977. 69 pp.

Finds that no increment in job satisfaction occurred with increasing educational attainment, although college graduates were consistently more satisfied with their jobs than workers who had not gone to college.

6.132 Raymond, R., and Sesnowitz, M. "The Returns to Investments in Higher Education: Some New Evidence." *Journal of Human Resources*, Vol. 10, No. 2, Spring 1975, pp. 139-54.

The authors generate age-income distributions by educational categories. They find that the rates of return did not decrease over the 1960s, and that the return to those completing 2-year programs may be higher than previously thought.

6.133 Reubens, Beatrice G. *Bridges to Work. International comparisons of Transition Services*. Montclair, N.J., Allanheld, Osmun, 1977. 275 pp.

Analyzes efforts in a number of countries to improve the range and quality of guidance and other informational services to youth in their search for work, and in aiding youth to adjust to work. Also discusses the organization of such services and their relative effectiveness.

6.134 Rhode, John Grant, and others. "Human Resource Accounting: A Critical Assessment." *Industrial Relations*, Vol. 15, No. 1, February 1976, pp. 13-25.

The authors argue that, while there is a need to devise improved measures of human resources, no attempts have yet succeeded in providing the needed information.

6.135 Ritzen, J.M.M. *Education, Economic Growth, and Income Distribution*. New York, Elsevier-North Holland, 1977. 271 pp.

Seeks to identify rules for investment in education, given utility maximization. Also considers the opportunity costs of education and the distribution of physical capital among workers.

6.136 Ritzen, Jozef M., and Balderston, Judith B. *Methodology for Planning Technical Education: With a Case Study of Polytechnics in Bangladesh*. New York and London, Praeger, 1975. 161 pp.

The authors evaluate changes in enrollment capacity, improvements in internal efficiency, relevance of training for jobs, and the cost-effectiveness of training.

6.137 Ritzer, George. *Working: Conflict and Change*. 2nd ed. Englewood Cliffs, N.J., •Prentice Hall, 1977. 426 pp.

Aims to convey an understanding of work from a sociological perspective, synthesizing current knowledge. Focuses on the changing nature of occupations and on the conflicts pervading the world of work.

6.138 Robison, David. *Training and Jobs Programs in Action. Case Studies in Private Sector Initiatives for the Hard-To-Employ*. New York, Committee for Economic Development, 1978. 202 pp.

Presents studies on improving the transition from school to work; unemployed persons with special disadvantages; older workers; alternative work patterns; and organizational arrangements. Urges wider adoption of practices described.

6.139 Rodgers, Daniel T. *The Work Ethic in Industrial America, 1850-1920*. Chicago, University of Chicago Press, 1978, 300 pp.

Analyzes the impact on ideas and ethics of work of change from a preindustrial, mainly artisan economy to an industrial economy.

6.140 Rotella, Elyce J. *Women's Labor Force Participation and the Growth of Clerical Employment in the United States, 1870-1930*. Doctoral dissertation presented to the University of Pennsylvania, 1977. 348 pp.

Examines the historical forces that led to increasing demand for clerical workers. Discusses the increase in educational attainment and the effect of technological change in office production on required clerical skills. Finds reduced unit costs of clerical output owing to technological change.

6.141 Ross, Allen F. *Human Capital and Technology in International Trade*. Doctoral dissertation submitted to Columbia University, 1978. 210 pp.

Attempts to show that the level of technological intensity in a given industry is positively related to the level of labor skills or human capital. Finds close relation between U.S. trade performance and human capital and technology, but not with physical capital.

6.142 Rubin, Marc. *Soviet Manpower Planning. Decentralized Action within a Centralized Framework*. Doctoral dissertation presented to the University of Pennsylvania, 1977. 361 pp.

Analyzes planning for and utilization of managerial and technical workers. Focuses on excessive creation of managerial personnel and their suboptimal use by enterprises. Discusses reform efforts. Argues further decentralization is necessary to attain optimality of labor use.

6.143 Rumberger, Russell W. *Overeducation in the U.S. Labor Market*. Doctoral dissertation presented to Stanford University, 1978. 220 pp.

Defines overeducation, and measures it in terms of educational attainment and skill requirements. Tests the notion that skill requirements have not risen, while educational attainment has. Finds that job skills have changed little since 1960, and that "overeducation" has increased.

6.144 Sachse, E. "Manpower Planning and Higher Education in the German Democratic Republic." *International Labour Review*, Vol. 113, No. 3, May-June 1976, pp. 377-89.

Argues the need to optimize the link between manpower planning and the educational system. Holds that this would help control the process of graduate education.

6.145 Sadan, E., and others. "Education and Economic Performance of Occidental and Oriental Family Farm Operators." *World Development*, Vol. 4, No. 5, May 1976, pp. 445-55.

The authors find that economic performance is closely associated with the level of formal schooling, status of women, degree of literacy, and family size.

6.146 Safford, Frank. *The Ideal of the Practical: Colombia's Struggle to Form a Technical Elite*. Austin, University of Texas Press, 1976. 373 pp.

Analyzes attempts to introduce technical education in 19th century Colombia by members of the political elite. Finds that while social values retarded this endeavor, lack of economic growth was the more important factor in its retardation.

6.147 Sandell, Steven, and Shapiro, David. *The Theory of Human Capital and the Earnings of Women: A Re-examination of the Evidence*. The Ohio State University, College of Administrative Science, June 1976. 33 pp.

The authors examine the empirical specification in human capital models of earnings in the presence of discontinuous work experience over the life cycle.

6.148 Sandmel, Samuel, ed. *Tomorrow's American*. New York, Oxford University Press, 1977. 188 pp.

A collection of essays on such subjects as economic growth, medical science, and the "intelligentsia" in a "futuristic" perspective.

6.149 Sarason, Seymour B. *Work, Aging and Social Change. Professionals, and the One-Life, One-Career Imperative*. New York, Free Press, 1977. 298 pp.

Discusses attitudes of highly educated persons toward their work and careers, emphasizing the relation between education and work satisfaction. Views this relation in part in terms of external influences, such as those exerted by World War II and the threat of nuclear war, but also by governmental policies and changing institutions.

6.150 Sasser, Earl W., and Arbeit, Stephen P. "Selling Jobs in the Service Sector." *Business Horizons*, Vol. 19, No. 3, June 1976, pp. 61-65.

Argues that service firms should not hastily substitute capital for labor, lest the same worker alienation problems arise as in manufacturing, and customer service deteriorate.

6.151 Sattinger, Michael. "Comparative Advantage in Individuals." *Review of Economics and Statistics*, Vol. 60, No. 2, May 1978, pp. 259-67.

Uses data from aptitude tests to explore comparative advantage in the performance of tasks by individuals. Shows the effects of comparative advantage on the distribution of earnings.

6.152 Schreiber, Carol T. *Changing Places: Women and Men in Nontraditional Clerical, Craft and Technical Jobs*. Doctoral dissertation presented to Yale University, 1977. 293 pp.

Investigates aspects of work experience of male and female entrants into clerical, technical, and craft jobs traditionally held by members of the opposite sex. Bases her findings on sample surveys of employees and their supervisors.

6.153 Schwartz, Aba. "Migration, Age, and Education." *Journal of Political Economy*, Vol. 84, No. 4, Part 1, August 1976, pp. 701-19.

Argues that the relationship of earnings to age and the effect of education upon it is sufficient to explain migration variables, i.e., distance moved, age, and education.

6.154 Seashore, Stanley E. "Assessing the Quality of Working Life: the U.S. Experience." *Labour and Society*, Vol. 1, No. 2, April 1976, pp. 69-79.

Reports on social indicators and employee surveys within establishments as means of assessing worklife quality. Discusses the conceptual foundations underlying employee surveys, as well as their generally management-oriented approach.

6.155 Sewell, William H., and Hauser, Robert M. *Education, Occupation, and Earnings: Achievement in the Early Career*. New York, Academic Press, 1975. 237 pp.

The authors argue the close relation between background and ability, and educational attainment, occupational status, and earnings.

6.156 Simcha, Ronen. "Job Satisfaction and the Neglected Variable of Job Seniority." *Human Relations*, Vol. 31, No. 4, April 1978, pp. 297-308.

Reports on a survey sample showing that, while satisfaction declines in the first few years of employment, it tends to rise thereafter. Attributes this rise to changes in work group composition due to attrition and turnover, and to a more realistic evaluation of attainable rewards.

6.157 Slifman, Lawrence. "Job Mobility and Labor Demand." *Industrial Relations*, Vol. 15, No. 2, May 1976, pp. 151-157.

Examines upward occupational movement among low-income workers. Analyzes the extent to which the supply of labor adapts to changing labor market requirements. Concludes that worker movement into higher classified, better paying jobs would be accelerated by policies that generate tighter labor markets.

6.158 Solmon, Lewis C., and others. *College as a Training Ground for Jobs*. New York, Praeger, 1977. 183 pp.

Responding to the argument that much of the labor force is being "overeducated," the authors investigate the relationship between college education and job performance, and how utilization of college-trained persons relates to job satisfaction and income.

6.159 Sonnenfeld, Jeffrey. "Dealing with the Aging Work Force." *Harvard Business Review*, Vol. 56, No. 6, November-December 1978, pp. 81-92.

Reporting on research results, the author refutes the stereotype of the aged as incompetent and lacking in worth for work. He discusses age-related changes, linking them with work attitudes and job performance, and offers recommendations.

6.160 Sorkin, Alan L. *Health Manpower: An Economic Perspective*. Lexington, Mass., Lexington Books, 1977. 175 pp.

Discusses a range of factors such as unionization, productivity, utilization of allied health workers, economics of group practice, quality of services, and others.

6.161 Spengler, Joseph. "Adam Smith on Human Capital." *American Economic Review*, Vol. 67, No. 1, February 1977, pp. 32-36.

Examines five pertinent topics—the optimizing system of natural liberty, the nature of human capital, its sources, its unnecessary costliness, and obstacles to its optimal use.

6.162 Srivastva, Suresh, and others. *Job Satisfaction and Productivity. An Evaluation of Policy-Related Research on Productivity, Industrial Organization and Job Satisfaction: Policy Development and Implementation*. Cleveland, Case Western Reserve University, Department of Organizational Behavior. Prepared for National Science Foundation. Distributed by National Technical Information Service, U.S. Department of Commerce, 1975. 391 pp.

The authors review research done over the preceding 15 years on organizational factors affecting job performance. They deal with factors that can be manipulated to produce desired results and the processes required to introduce particular levers of action.

6.163 State of Florida, Department of Education. *Topical Conference on Adult Literacy: Economic and Social Perspectives on Adult Illiteracy*. Tallahassee, 1977. 114 pp.

The authors consider such topics as the economic benefits of education, the problem of illiteracy, and the savings to society by investment in adult education.

6.164 Stoikov, V. "On Some Models of the Educational Decision." *Kyklos*, Vol. 30, No. 1, 1977, pp. 74-87.

Discusses limitations of human capital models developed by Becker and Mincer, arguing that a wealth maximization model partially overcomes these limitations.

6.165 Sutermeister, Robert A. *People and Productivity*. New York, McGraw-Hill, 1976. 475 pp.

Focuses on the relation of job satisfaction and motivation to productivity and discusses the factors affecting them in detail.

6.166 Tachibanaki, T. "Quality Change in Labor Input: Japanese Manufacturing." *Review of Economics and Statistics*, Vol. 58, No. 3, August 1976, pp. 293-99.

Measures occupation, experience, and size of firm as sources of labor input quality, in addition to age, sex, and education. Develops data for 1958-70, arguing that quality change is much higher than that indicated by comparable studies.

6.167 Takezawa, Shin-Ichi. "The Quality of Working Life: Trends in Japan." *Labour and Society*, Vol. 1, No. 1, January 1976, pp. 29-48.

Discusses traditions, pressures, and proposed solutions affecting the quality of working life, as well as future trends. Deals with trade union involvement and work reorganization experiments.

6.168 Tapinos, Georges. "Economic Fluctuations and Labour Migration." *Labour and Society*, Vol. 1, No. 1, January 1976, pp. 95-103.

Discusses structural changes in the economies of receiving countries, and changes in their economic policies, impinging on migration. Examines the dependence of labor markets on migrants, and trade union attitudes.

6.169 Taveggia, Thomas C., and Ziemba, Thomas. "Linkages to Work. A Study of the 'Central Life Interests' and 'Work Attachments' of Male and Female Workers." *Journal of Vocational Behavior*, Vol. 12, No. 3, June 1978, pp. 305-20.

Reporting the results of a survey, the authors find male employees to be somewhat more work-oriented than female employees. They also find that female employees are more attached to extrinsic work features.

6.170 Taylor, Arthur J., ed. *The Standard of Living in Britain in the Industrial Revolution*. New York, Harper & Row, Barnes and Noble, 1975. 216 pp.

A collection of essays focusing on the 'quality of life' as well as the material standard in real wage terms during the period 1790-1850.

6.171 Taylor, Ronald N., and Thompson, Mark. "Work Value Systems of Young Workers." *Academy of Management Journal*, Vol. 19, No. 4, December 1976, pp. 522-36.

Based on a survey, the authors find a strong association between work values and education and age, but little evidence for a pervasive generation gap.

6.172 Thurman, J.E. "Job Satisfaction: An International Overview." *International Labour Review*, Vol. 116, No. 3, November-December 1977, pp. 249-67.

Argues that overall job satisfaction cannot be used as a yardstick of well-being at the workplace, but that workers' reactions to specific aspects of their jobs are meaningful. Discusses promotion prospects and job content as important variables of job satisfaction.

6.173 Tidrick, Thomas Howard. *Education Production Function with Alternative Technologies*. Doctoral dissertation presented to Georgia State University, 1977. 189 pp.

Based on data from low-income black neighborhoods in Atlanta, the author investigates the factors influencing outcomes of the education process. Finds that teacher quality, student personality, and innovative technology promote academic gains.

6.174 Tinbergen, Jan. *Income Differences: Recent Research*. New York, American Elsevier, 1975. 73 pp.

Discusses human capital and educational planning theories of income distribution. Deals with the demand and supply of productive factors as they are related to income distribution.

6.175 Tynan, Oliver. "Job Improvement: The Personal Views of a Practitioner." *International Labour Review*, Vol. 117, No. 3, May/June 1978, pp. 319-30.

Observes that most job improvement plans are initiated to solve such problems as high labor turnover, recruitment difficulties, low productivity, or industrial relations turmoil. Argues that at least British employers must adapt their workplaces to school graduates who desire to make more choices of their own than their predecessors.

6.176 Van Cleve, Roy, and Marshall, Ray. "Start-up Training and Rural Industrial Location." *Monthly Labor Review*, Vol. 99, No. 4, April 1976, pp. 23-25.

The authors argue the need for start-up training to attract industry and upgrade disadvantaged workers. They discuss existing programs and explore their impact on industrial relocation and manpower upgrading.

6.177 Vogel, E. "Some Suggestions for the Advancement of Working Women." *International Labour Review*. Vol. 112, No. 1, July 1975, pp. 29-43.

Maintains that a great reserve of human resources and skills is trapped, and can only be freed by the elimination of stereotypic female occupations. Also argues for dynamic vocational training, legislation to promote equality at work, and comprehensive family welfare programs to ease the burdens undertaken by women.

6.178 Walter, John P., and others. *Deprived Urban Youth: An Economic and Cross-Cultural Analysis of the United States, Colombia, and Peru.* New York, Praeger, 1975, 147 pp. pp.

The authors examine economic-demographic factors affecting the enrollment status and labor force participation of deprived urban youth, the effect of the lack of entrepreneurs in deprived areas, and nutritional and medical factors influencing the amount and quality of human capital embodied in the urban youth considered.

6.179 Weaver, Charles N. "Sex Differences in the Determinants of Job Satisfaction." *Academy of Management Journal*, Vol. 21, No. 2, June 1978, pp. 265-74.

Reporting on a sample survey, the author finds that factors influencing job satisfaction are similar for men and women if certain variables, such as pay, prestige, and certain other working conditions, are held constant.

6.180 West, E.G. *Education and the Industrial Revolution*. New York, Barnes & Noble, 1975. 275 pp.

Examines the relationship between education and industrialization in 19th-century England and Wales.

6.181 White, Bernard J. "The Criteria for Job Satisfaction: Is Interesting Work Most Important?" *Monthly Labor Review*, Vol. 100, No. 5, May 1977, pp. 30-35.

Analyzes data presented in official reports (*Work in America* and *Survey of Working Conditions*). Disputes the high ranking given interesting work. Finds that disaggregating composite findings for all surveyed workers yields large differences in the ranking of "interesting work "

6.182 Widick, B.J., ed. *Auto Work and Its Discontents*. Baltimore, Johns Hopkins University Press, 1976. 112 pp.

Presents essays dealing with job dissatisfaction, working conditions, and management interests.

6.183 Wirtz, W., and Goldstein, H. "Measurement and Analysis of Work Training." *Monthly Labor Review*, Vol. 98, No. 9, September 1975, pp. 19-26.

The authors discuss the relation between career choices and opportunities. They evaluate various combinations of education and training courses.

6.184 Wolff, Edward. "Schooling and Occupational Earnings." *Review of Income and Wealth*, Vol. 42, No. 4, Fall 1977, pp. 259-78.

Finds earnings to be positively related to mean education across occupations. Within occupations, observes no relation between schooling and earnings for most of his sample. Also finds that the sensitivity of earnings to education is greater for white men than for white women and much greater for whites than for blacks.

6.185 Wool, Harold. "Future Labor Supply for Lower Level Occupations." *Monthly Labor Review*, Vol. 99, No. 3, March 1976. pp. 22-31.

After defining his terms, the author projects a reduced supply of workers under "full employment" conditions, leading to higher wages, upgrading of jobs, and substitution.

6.186 Wool, Harold. *The Labor Supply for Lower Level Occupations*. New York, Praeger, 1976. 383 pp.

Argues that social and demographic factors are reducing earlier sources of manpower for lower level jobs (e.g., blacks, rural migrants, immigrants). Develops supply-relevant criteria for ranking occupations and analyzes the relation between labor supply variables and relative wages. Assesses probable future labor market adjustments.

6.187 Yorks, Lyle. *A Radical Approach to Job Enrichment*. New York, Amacom, 1976. 209 pp.

Analyzes the relation between organization structure and employee performance and the motivation of employee behavior. Discusses the selection of "enrichable" jobs, the management of job changes, and approaches to job design.

6.188 Young, Jared J. *Discrimination, Income, Human Capital Investment, and Asian-Americans*. San Francisco, R&E Research, 1977. 97 pp.

Argues that at least until 1960, Asian-Americans received less returns to education than the majority of the population. Concludes that they were subject to economic discrimination.

6.189 Zymelman, Manuel. *The Economic Evaluation of Vocational Training Programs*. Baltimore, Johns Hopkins University Press, 1976. 122 pp.

Formulates a method for analyzing and evaluating the establishment of vocational training programs. Finds no evidence of their superiority over other training methods.

Hours and work schedules

7.1 Bassett, Glenn A. *A Study of the Effects of Task Goal and Schedule Choice on Productivity*. New Haven, Yale University School of Graduate Studies. 1978. 222 pp.

Reviews the economic meaning of increased productivity. Examines aspects of pay and pay variation in terms of productivity. Also explores goal setting and flexible scheduling and evaluates job satisfaction and job design as productivity factors.

7.2 Bednarzik, Robert W. "How Many Hours of Work Do the Unemployed Want?" *Monthly Labor Review*, Vol. 101, No. 12, December 1978, pp. 70–71.

Summarizes findings from a Census query. Notes the increase in the demand for part-time work.

7.3 Bednarzik, Robert W. *Part-Time Work and Public Policy*. Doctoral dissertation presented to the University of Missouri, 1978. 162 pp.

Examines demographic characteristics of part-time workers, and cyclical variations and trends in part-time work. Notes the transitional function part-time work serves for segments of the labor force (e.g., youths). Explores reasons for accepting part-time work.

7.4 Behrend, H., and Pocock, S. "Absence and the Individual: A Six-Year Study in One Organisation." *International Labour Review*, Vol. 114, No. 3, December 1976, pp. 311–27.

The authors discuss means of remedying absenteeism, such as improving motivation and work environment. They examine absenteeism in relation to age, length of service, and other factors.

7.5 Blau, Gary. *Highlights of the Literature—Trends in Product Quality and Worker Attitude*. Scarsdale, N.Y., Work in America Institute, Inc. 1978. 36 pp.

In addition to reviewing the literature, the author investigates factors affecting product quality and productivity, including the shortened workweek, job enrichment, and goal setting.

7.6 Bohlander, George W. *Flextime, a New Face on the Work Clock*. Los Angeles, Institute of Industrial Relations, University of California. 1977. 138 pp.

Discusses advantages and drawbacks of flexible work hours, union attitudes, and feasibility under varying conditions.

7.7 Carpentier, James, and Cazamian, Pierre. *Night Work: Its Effects on the Health and Welfare of the Worker.* Geneva, International Labour Office. 1977. 82 pp.

The authors explore the factors determining the spread of the practice of night work, and assess its physical effects, as well as its effects on family and social life. They also discuss the ergonomic aspects of night work organization, and recommend possible rearrangements.

7.8 Dalton, Donald Henry. *The Age of the Constant Workweek. Hours of Work in the U.S. Since World War II.* Doctoral dissertation presented to the University of California, Berkeley. 1975. 251 pp.

Finds the growth in leisure time to have leveled off on average, a slight decline in the workweek having been offset by a slight rise in labor force participation. Proposes a theory of the supply of labor based on the propensity to work, related chiefly to tradition and habit.

7.9 Derek, Leslie. "Hours and Overtime in British and United States Manufacturing Industries: A Comparison." *British Journal of Industrial Relations*, Vol. 14, No. 2, July 1976, pp. 194–201.

Investigates the responsiveness of overtime and hours of work to demand from workers. Finds that they are sensitive to market conditions.

7.10 Devens, Richard M., Jr. "The Average Workweek: Two Surveys Compared." *Monthly Labor Review*, Vol. 101, No. 7, July 1978, pp. 3-8.

Compares payroll data and household survey estimates. Discusses workweek by industry.

7.11 Deutermann, William V., Jr., and Brown, Scott C. "Voluntary Part-Time Workers: A Growing Part of the Labor Force." *Monthly Labor Review*, Vol. 101, No. 6, June 1978, pp. 3–10.

The authors trace historical trends, describe personal characteristics, and discuss occupation and industry.

7.12 Dunham, Randall B., and Hawk, Donald L. "The Four Day/Forty Hour Week—Who Wants It?" *Academy of Management Journal*, Vol. 20, No. 4, Dec. 1977, pp. 644–55.

Reporting on the results of a sample survey, the authors find that workers favoring a 4-day, 40-hour workweek tend to be young, to hold low-level jobs, and to have low levels of satisfaction with pay and kind of work, They also evince little sense of identification with the company.

7.13 Elbing, Alvar O., and others. "Flexible Working Hours: The Missing Link." *California Management Review*, Vol. 17, No. 3, Spring 1975, pp. 50–57.

The authors observe that time at work and productivity are not necessarily positively associated. They note that a flexible system of hours is easy to administer and can help improve the level and quality of worker participation.

7.14 Golembiewski, Robert T., and Proehl, Carl W. "A Survey of the Empirical Literature on Flexible Work Hours. Character and Consequences of a Major Innovation." *Academy of Management Review*, Vol. 3, No. 4, October 1978, pp. 837–53.

Evaluating the literature, the authors focus upon the characteristics of flexitime programs and detail the effects reported. They find that, despite limitations, the data encourage more flexitime applications.

7.15 Goldberg, Marrilyn P. *Housework as a Production Activity. Changes in the Content and Organization of Household Production.* Doctoral dissertation presented to the University of California, Berkeley. 1977. 298 pp.

Explains reasons for long hours of work in the household. Finds that maintenance requirements have neither decreased the need for long hours nor improved the quality of household work. Investigates effects of sharing household work by all household members.

7.16 Gronau, Reuben. "Leisure, Home Production and Work." *Journal of Political Economy*, Vol. 85, No. 6, Dec. 1977, pp. 1099–1123.

Investigates the relationship of work in the market to work at home and to leisure. Finds that an increase in income increases leisure and reduces work in the market but leaves work at home unchanged. Also investigates the implications for fertility, demand for child care, and the measurement of home output.

7.17 Hartley, Jo. "Experience with Flexible Hours of Work." *Monthly Labor Review*, Vol. 99, No. 5, May 1976, pp. 41–42.

Based on a lengthier study, the author reports that reductions in tardiness, absenteeism, and turnover, as well as higher productivity, were experienced by surveyed employers as a result of flexible work hours.

7.18 Hedges, Janice Neipert. "Absence from Work—Measuring the Hours Lost." *Monthly Labor Review*, Vol. 100, No. 10, October 1977, pp. 16–23.

Discusses various measures of absence, applying them to survey data. Discusses industry variations as well as occupational and age-sex breakdowns.

7.19 Hedges, Janice Neipert. "Flexible Schedules: Problems and Issues." *Monthly Labor Review*, Vol. 100, No. 2, February 1977, pp. 62–65.

Discusses some of the general aspects of flexitime, as well as flexitime systems in Europe. Also discusses scheduling, costs, and wage and hour laws, and the problems these give rise to.

7.20 Hedges, Janice Neipert, and Gallogly, Stephen J. "Full and Part Time: A Review of Definitions." *Monthly Labor Review*, Vol. 100, No. 3, March 1977, pp. 21–28.

The authors review reasons why certain cutoffs have been used to define full and part time. They discuss variations by industry, differences between hours worked and hours scheduled, and the problem of discontinuity should current definitions be altered.

7.21 International Labour Office. *Management of Working Time in Industrialised Countries*. Main Documents of an ILO Symposium on Arrangement of Working Time and Social Problems Connected with Shift Work in Industrialised Countries. Geneva, May 3-11, 1977. 124 pp.

Explores health, personal, family, social, and occupational effects of shift work, and means to alleviate problems. Also deals with managerial aspects and optimal shift-work patterns.

7.22 Jones, Ethel B., and Long, John E. *Women and Part-Week Work*. Auburn, Auburn University School of Business, 1978.

The authors examine the proportion of women experiencing part-week employment and their characteristics; wage effects; and impact of unemployment experience.

7.23 Katzman, David M. *Seven Days a Week. Women and Domestic Service in Industrializing America*. New York, Oxford University Press, 1978. 374 pp.

Argues the influence of status, race, ethnicity, and sex, as well as of economic factors, on household labor. Discusses relations between mistresses and servants, and the "servant problem."

7.24 King, Allan G. "Industrial Structure, the Flexibility of Working Hours, and Women's Labor Force Participation." *Review of Economics and Statistics*, Vol. 60, No. 3, August 1978, pp. 399–407.

Examines the extent to which the variability in hours of work available in a labor market conditions women's ability to meet their household obligations, and thus influences women's participation rates.

7.25 Kniesner, T.J. "The Full-Time Workweek in the United States, 1900-1970." *Industrial and Labor Relations Horizons*, Vol. 30, No. 1, October 1976, pp. 3–15.

Finds that, since 1940, the average workweek for full-time workers has not declined, even after correcting for underreporting of paid leave. Explains reasons for this "secular rigidity" in terms of rising education, and rising earnings of women.

7.26 Kuehen, Robert J., and Blair, Courtney O. "Flexitime." *Business Horizons*, Vol. 21, No. 2, April 1978, pp. 39–44.

The authors describe forms and uses of flexible work hours, their history, and their advantages and limitations.

7.27 Leon, Carol, and Bednarzik, Robert W. "A Profile of Women on Part-time Schedules."

Monthly Labor Review, Vol. 101, No. 10, October 1978. pp. 3–12.

After reporting on such underlying changes as demographic patterns and the shift to service employment, the authors present a profile of the part-time worker, discussing age distribution, family responsibilities, education, and work schedules.

7.28 Leuthold, Jane H. "The Effect of Taxation on the Hours Worked by Married Women." *Industrial and Labor Relations Review*, Vol. 31, No. 4, July 1978, pp. 520–26.

Finds that a reduction in the marginal tax rate on the income of married women would result in an increase in their hours of work.

7.29 Levitan, Sar, and Belous, Richard S. *Shorter Hours, Shorter Weeks. Spreading the Work to Reduce Unemployment.* Baltimore, John Hopkins University Press, 1977. 94 pp.

The authors argue that stability in the 40-hour week has been mainly a post-World War II phenomenon, and that a shortening of the workweek is likely. They also argue that this would alleviate unemployment. They detail long-run and short-run trends, impact on productivity, collective bargaining over hours, and experience in both the United States and Europe.

7.30 Mahoney, Thomas A. "The Re-Arranged Workweek. Evaluations of Different Work Schedules." *California Management Review*, Vol. 20, No. 4, Summer 1978, pp. 31–39.

Appraises the literature and presents the results of a survey, showing that most surveyed persons preferred nontraditional work schedules. Also finds no consistent relation between job attitudes and work schedule preferences.

7.31 Maklan, David M. *The Four-Day Workweek. Blue-Collar Adjustment to a Nonconventional Arrangement of Work and Leisure Time.* Geneva, International Labour Office, 1978. 64 pp.

Views the shorter workweek in terms of a changing work-leisure balance, resulting from a search for a more satisfying life style. Examines problems of individual adjustments to new time schedules, inquiring whether alternate work-leisure schedules are genuine social innovations.

7.32 Maklan, David Mark. "How Blue-Collar Workers on 4-Day Workweeks Use Their Time." *Monthly Labor Review*, Vol. 100, No. 8, August 1977, pp. 18–26.

Based on a survey, the author reports on the uses of time for household obligations, childcare, use of mass media, social activities, and activities related to paid work.

7.33 Mamlouk, Walied J. *The Four-Day Workweek and Its Impact on Energy Consumption*. Doctoral dissertation presented to The American University, 1975. 184 pp.

Finds that energy consumption in the transportation and commercial sectors would be reduced, but not measurably in the residential sector. Presents no conclusive findings for the industrial sector, owing to many complexities.

7.34 Miller, Jefferey M. *Innovations in Working Patterns.* Report of the U.S. Trade Union Seminar on Alternative Work Patterns in Europe. Washington, Communications Workers of America and The German Marshall Fund of the United States, 1978. 47 pp.

Discusses the international scope of job innovations, particularly flexible work hours, in terms of worker dissatisfaction.

7.35 Miner, Mary G. *Work Scheduling Policies.* Washington, Bureau of National Affairs, 1977. 51 pp.

Presenting survey results from a number of companies, the author finds that the 40-hour workweek is standard for plant and service employees in more than four-fifths of these companies. Practices of shift work and overtime scheduling are also discussed.

7.36 Morgenstern, Richard D. and Hamovitch, William. "Labor Supply of Married Women in Part-Time and Full-Time Occupations." *Industrial and Labor Relations Review*, Vol. 30, No. 1, October 1976, pp. 59–67.

The authors develop a method to distinguish part-time from full-time occupations, and formulate separate labor supply functions.

7.37 Moye, William T. "The End of the 12-Hour Day in the Steel Industry." *Monthly Labor Review*, Vol. 100, No. 9, September 1977, pp. 21–26.

Discusses the main sources of pressure to reduce the 12-hour day, not only among workers but from within the industry. Also notes public pressure to reduce the workday, and discusses reasons for the industry's persistent opposition to such a reduction.

7.38 Muchinsky, Paul M. "Employee Absenteeism: A Review of the Literature." *Journal of Vocational Behavior*, Vol. 10, No. 3, June 1977, pp. 316–40.

Reviews studies examining the relationship between absenteeism and attitudinal and organizational variables; efforts to reduce absenteeism; and measurement problems.

7.39 National Commission for Manpower Policy. *Work Time and Employment*. Special Report No. 28, October 1978. Washington, U.S. Government Printing Office. 446 pp.

A collection of papers on long-term trends in worktime; the relation between worktime and employment decisions; work sharing and unemployment; the relation between overtime pay premiums and employment; and retirement age policy and employment.

7.40 Norsworthy, J.R. and Fulco, L.J. "Productivity and Costs in the Second Quarter." *Monthly Labor Review*, Vol. 100, No. 11, November 1977, pp. 34–38.

In addition to discussing recent trends, the authors present an analysis of cyclical movements in hours.

7.41 Olsen, John G. "Decline Noted in Hours Required to Erect Federal Office Buildings." *Monthly Labor Review*, Vol. 99, No. 10, October 1976, pp. 18–22.

Discusses on-site labor requirements trends, distribution of costs, and characteristics of specific buildings.

7.42 Owen, J.D., "Flexitime: Some Problems and Solutions." *Industrial and Labor Relations Review*, Vol. 30, No. 2, January 1977, pp. 152–60.

Argues that union leaders have been skeptical of flexitime because they believe it may reduce employees' gross earnings, increase the intensity of work, complicate enforcement of wage and hour laws, and otherwise provide greater benefits to employers than to workers.

7.43 Owen, John D. "Why Part-Time Workers Tend to be in Low-Wage Jobs." *Monthly Labor Review*, Vol. 101, No. 6, June 1978, pp. 11–14.

Discusses characteristics of part-time workers and their relation to various kinds of work schedules. Also discusses wage differentials and reasons why some full-time jobs cannot be readily converted to part time.

7.44 Owen, John D. "Workweeks and Leisure: An Analysis of Trends, 1948-75." *Monthly Labor Review*, Vol. 99, No. 8, August 1976, pp. 3–7.

Discusses weekly hours worked by major groups in the labor force. Presents estimates of worktime in the household. Deals with reasons for the leveling-off of the workweek. Argues the high cost of childrearing as a factor stemming the decline in the workweek.

7.45 Porter, Alan L. and Rossini, Frederick A. "Flexiweek." *Business Horizons*, Vol. 21, No. 2, April 1978, pp. 57–63.

The authors describe flexible weekly work schedules, problems of adopting them, the "flexiweek" in public service, and benefits.

7.46 Price, Charlton R. *Alternatives in the World of Work*. Committee on Alternative Work Patterns and National Center for Productivity and Quality of Working Life. Washington, U.S. Government Printing Office, Winter 1976. 40 pp.

Reports the highlights of U.S. Senate hearings and a national conference on experiences with flexible working hours, part-time employment, and autonomous work groups.

7.47 Ratner, Ronnie S. *A Modest Magna Charta: The Rise and Growth of Wage and Hours Standard Laws in the United States, 1900-1973. A Social Indicators Approach*. Doctoral dissertation presented to New York University, 1977.

Investigates patterns of emergence and growth of legal standards and relationships to broader economic, political and social changes. Devises quantitative indexes measuring change and diffusion. Describes processes of legislative change, State patterns, and related topics.

7.48 Robertson, G., and Ferlejowski, P. *A Comparative Review of Innovative Working Time Arrangements in Ontario.* Toronto, Ontario Ministry of Labour, October 1975. 24 pp.

The authors present a survey of establishments, stratified by industry and office or non-office category, of workers of various types of work schedules. They discuss the advantages and disadvantages, as reported by employers, as well as reasons for discontinuing compressed or flexible schedules.

7.49 Sloane, P.J. "Economic Aspects of Shift and Night Work in Industrialised Market Economies." *International Labour Review*, Vol. 117, No. 2, March/April 1978, pp. 129–42.

Argues that cost/benefit studies are needed to discover the optimal amount of shift work, and that such studies are made difficult by insufficient data, including, for numerous industrialized countries, the extent of night-shift work.

7.50 Teriet, Bernhard. "Flexiyear Schedules—Only a Matter of Time." *Monthly Labor Review*, Vol. 100, No. 12, December 1977, pp. 62–65.

Reports on discussions of the "working year contract" in Sweden, France, and Germany, and how it would operate. Notes some social implications. Also discusses the contract as a management tool.

7.51 U.S. General Accounting Office, Comptroller General of the United States. *Contractors' Use of Altered Work Schedules for Their Employees—How is it Working?* Washington, April 7, 1976. 31 pp.

Discusses reasons for the use of flexible and compressed work schedules, experience with them, and Federal laws limiting them for Government contractors.

7.52 U.S. House of Representatives, Committee on Post Office and Civil Service. *Part-Time Employment and Flexible Work Hours.* Hearings. May 24, 26, June 29, July 8, and October 4, 1977. Washington, U.S. Government Printing Office, 1977. 319 pp.

Contains testimony, statements, and communications from a wide range of witnesses.

7.53 U.S. Senate, Committee on Governmental Affairs. *Flexitime and Part-Time Legislation.* Hearing, June 29, 1978. Washington, U.S. Government Printing Office, 1978. 452 pp.

Presents testimony, statements, and letters from a wide range of witnesses.

7.54 U.S. Senate, Subcommittee on Labor of the Committee on Human Resources. *Federal Employees Flexible and Compressed Work Schedules Act, 1978.* Hearing. August 28, 1978. Washington, U.S. Government Printing Office, 1978. 101 pp.

Contains testimony and statements from a wide range of witnesses, as well as a draft of proposed legislation.

7.55 Weinstein, Harriet Goldberg. *A Comparison of Three Alternative Work Schedules: Flexible Work Hours, Compact Work Week, and Staggered Work Hours.* Industrial Research Report, Miscellaneous Series No. 23. Philadelphia, The Wharton School, University of Pennsylvania, 1975. 189 pp.

Reviews the relevant literature. Seeks to determine whether the change-in-hours movement has been as widespread and successful as the literature implies. Also analyzes the presumed benefits of revised schedules, reasons for the initiation of changes in schedules, and related matters.

7.56 Zalusky, John. "Shift Work—A Complex of Problems." *AFL-CIO American Federationist*, Vol. 85, No. 5, May 1978, pp. 1–6.

Examines extent of shift work and wage differentials under collective bargaining agreements; types of shift work; and studies pertaining to its physiological effects.

7.57 Zalusky, John. "Shorter Hours—the Steady Gain." *AFL-CIO American Federationist*, Vol. 85, No. 1, Jan. 1978, pp. 12–16.

Discusses trends, regional differences, and key collective bargaining agreements pertaining to the shorter workweek.

Capital

8.1 Bailetti, Antonio J. *The Investment Process in the Iron and Steel Industry: Dimensions and Determinants.* Doctoral dissertation presented to the University of Cincinnati, 1976. 203 pp.

Analyzes determinants of investment, dividend, and financing decisions and evaluates their interactions. Finds that modernization needs exerted pressures to reduce dividends, but not expansion needs. Also finds that poor profit performance and need for "defensive spending" reduced incentives to expand.

8.2 Bosworth, Barry. "The Issue of Capital Shortage." In *U.S. Economic Growth from 1976 to 1986: Prospects, Problems, and Patterns*. Vol. 3—*Capital*. Studies Prepared for the Use of the Joint Economic Committee, U.S. Congress, November 15, 1976. Washington, U.S. Government Printing Office, pp. 1–14.

Discusses problems of financing investment, the relation of capital formation to economic growth, and specific industry shortages.

8.3 Brown, Murray, and others. *Essays in Modern Capital Theory*. Contributions to Economic Analysis No. 95. New York, American Elsevier, 1976. 275 pp.

Presents conference papers dealing with the "Cambridge controversy" in capital theory; technological input-output relation specifications; and certain new approaches.

8.4 Buechner, M.N. "Frank Knight on Capital as the Only Factor of Production." *Journal of Economic Issues*, Vol. 10, No. 3, September 1976, pp. 598–617.

Shows that wage labor cannot be classed as capital, since laborers are not bought or sold, i.e., capitalized.

8.5 Cairncross, A.K. *Home and Foreign Investment, 1870-1913: Studies in Capital Accumulation*. Reprints of Economic Classics. Clifton, N.J., Augustus M. Kelley, 1975. 251 pp.

Examines the part which capital accumulation played in the economic system, how it responded to influences at home and abroad, and how it, in turn, affected economic development. Also deals with internal migration and its impact on labor market patterns.

8.6 Carlsson, B., and Ohlsson, L. "Structural Determinants of Swedish Foreign Trade. A Test of the Conventional Wisdom." *European Economic Review*, Vol. 7, No. 2, February 1976, pp. 165–74.

The authors question the belief that Sweden's export competitiveness is linked to high capital intensity and inputs of technical know-how in combination with availability of forest raw materials. They find that capital intensity does not play the role claimed for it.

8.7 Craven, J.A.G. "Capital Theory and the Process of Production." *Economica*, Vol. 42, No. 167, August 1975, pp. 283–91.

Investigates a two-sector model of economic growth, in which machines are shiftable only when new, and in which inputs and outputs in a process may occur unevenly over time.

8.8 Gupta, K.L. "Foreign Capital Inflows, Dependency Burden, and Savings Rates in Developing Countries: A Simultaneous Equation Model." *Kyklos*, Vol. 28, No. 2, 1975, pp. 358–74.

Finds that previous studies significantly underestimated the negative effects of dependency, and exaggerated the negative effects of foreign capital inflows.

8.9 Davenport, Paul T. *Capital Accumulation and Economic Growth*. Doctoral dissertation presented to the University of Toronto, 1976. Pp. not indicated.

Offers a critique of the growth accounting techniques evolved by Denison, Kendrick, Griliches, and others. Argues that the technique lacks a theoretical base, and that no historical meaning attaches to the separation of technical change from investment in physical capital.

8.10 Denison, Edward F. "The Contribution of Capital to the Postwar Growth of Industrial Countries." In *U.S. Economic Growth from 1976 to 1986: Prospects, Problems, and Patterns*. Vol. 3—Capital. Studies Prepared for the Use of the Joint Economic Committee, U.S. Congress, November 15, 1976. Washington, U.S. Government Printing Office, pp. 45–83.

Discusses the relation of capital and growth in the United States and international differences in levels and growth rates of output. Also deals with the growth of capital in Japan.

8.11 Eisner, Robert. "Capital Shortage: Myth and Reality." *American Economic Review*, Vol. 67, No. 1, pp. 110–15.

Argues that claims of an impending capital shortage fail to take into account the adjustment mechanisms inherent in market interest rates; slowdown of discards of equipment in the face of higher capital costs; and shifts to less capital intensive industries and products.

8.12 Eisner, Robert. "The Corporate Role in Financing Future Investment Needs." In *U.S. Economic Growth from 1976 to 1986: Prospects, Problems, and Patterns*. Vol. 3—*Capital*. Studies Prepared for the Use of the Joint Economic Committee, U.S. Congress, November 15, 1976. Washington, U.S. Government Printing Office, pp. 16–32.

Discusses projected needs, and the record and prospects for financing corporate investments. Also deals with the rate of return, the identity between saving and investment, and the effects of monetary policy.

8.13 Feldstein, Martin. "Social Security and Saving: The Extended Life Cycle Theory." *American Economic Review*, Vol. 66, No. 2, May 1976, pp. 77–86.

Cites statistical estimates which show that social security leads to reduced private saving. Argues that a much smaller capital stock is the result, and that therefore productivity, real wage rates, and national income are lower than they would otherwise be.

8.14 Von Furstenberg, George M., and Malkiel, Burton G. "The Government and Capital Formation: A Survey of Recent Issues." *Journal of Economic Literature*, Vol. XV, No. 3, September 1977, pp. 835–78.

The authors first review the literature on capital formation in a full employment context. They then discuss the effect on saving of income maintenance and income security programs, the differing effects of tax financing, money financing, and bond financing. They also deal with the impact of taxes, subsidies, and regulations on the allocation of private investment.

8.15 Gaffney, Mason. "Capital Requirements for Economic Growth." In *U.S. Economic Growth from 1976 to 1986: Prospects, Problems, and Patterns*. Vol. 8—*Capital Formation: An Alternative View*. Studies Prepared for the Use of the Joint Economic Committee. U.S. Congress. Washington, U.S. Government Printing Office, pp. 56–75.

Argues that while labor is relatively plentiful, capital and resources are not, and that labor should be increasingly substituted for these. Proposes pertinent changes in tax policy.

8.16 Gapinski, J.H., and Kumar, T.K. "Embodiment, Putty-Clay, and Misspecification of the Directly Estimated CES." *International Economic Review*, Vol. 17, No. 2, June 1976, pp. 472–83.

The authors postulate a data-generating model founded on the "putty-clay" hypothesis.

8.17 Gilpin, Robert. *U.S. Power and the Multinational Corporation: The Political Economy of Foreign Direct Investment*. New York, Basic Books, 1975. 291 pp.

Argues that foreign direct investment by the United States and multinational corporations has been responsible for accelerating the relative decline in the American economy by diffusing economic growth, industry, and technology.

8.18 Gold, B., and Boylan, M.G. "Capital Budgeting, Industrial Capacity, and Imports." *Quarterly Review of Economics and Business*, Vol. 15, No. 3, Autumn 1975, pp. 17–32.

The authors demonstrate that the expected return on investment in new facilities must be substantial in industries whose equipment units and plants are subject to strong economies of scale. They criticize sole reliance on net present value budgeting.

8.19 Gordon, Lawrence A. "The Return on Investment and the Cost of Capital." *Management Accounting*, Vol. 57, No. 8, February 1976, pp. 37-40.

Discusses conceptual confusions regarding returns to and costs of investment. Recommends altering accounting information in order to eliminate the differences between the accounting return on investment and the internal rate of return.

8.20 Gossling, W. F., ed. *Capital Coefficients and Dynamic Input-Output Models*. London, Input-Output, 1975, 157 pp.

A collection of essays analyzing the use of input-output in determining effective supply over the medium-term future. Includes an overview of the current state of research in dynamic input-output models.

8.21 Green, D.W. "Capital Formation in the USSR, 1959-1974: An Econometric Investigation of Bureaucratic Intervention in the Process of Capital Construction." *Review of Economics and Statistics,* Vol. 60, No. 1, February 1978, pp. 39-46.

Evaluates capital formation by relating Soviet statistics on operating fixed capital to new capital investments. Estimates capital formation equations for six nonagricultural sectors and ten branches of industry.

8.22 Grossman, Elliot S. *A Guide to the Determinants of Capital Investment.* New York, The Conference Board, 1977. 41 pp.

Discusses such factors as net return, cost of funds, prices, and capital utilization, as well as the relation of inflation to investment. Also discusses the capital requirements issue. Outlines an econometric approach.

8.23 Hax, Arnoldo C., and Wiig, Karl M. "The Use of Decision Analysis in Capital Investment Problems." *Sloan Management Review,* Vol. 17, No. 2, Winter 1976, pp. 19-48.

The authors suggest a type of analysis for simultaneously optimizing multiple objectives and describe a method of analyzing capital investment decisions where all inputs are identified.

8.24 Hulten, Charles R. "Technical Change and the Reproduction of Capital." *American Economic Review,* Vol. 65, No. 5, December 1975, pp. 956-65.

Argues that changes in technology induce capital accumulation not usually taken account of in conventional production functions Estimates the amount of the additional capital, resulting in twice as high a rate of technical progress as usually calculated.

8.25 Kendrick, John W. *The Formation and Stocks of Total Capital.* New York, National Bureau of Economic Research, 1976. 256 pp.

Argues that total investment and stocks of capital associated with it should include tangible as well as intangible capital outlays, such as costs of rearing, research and development, health and safety, and mobility. Hypothesizes that comprehensive estimates of capital stock largely explain the growth of real product, and that the "productivity residual" is lessened when intangible capital outlays are combined with capital stocks.

8.26 Koshimura, Shinzaburo. *Theory of Capital Reproduction and Accumulation,* Kitchener, Ontario, Dumont Press Graphix, 1975. 161 pp.

Introduces and formalizes categories and concepts of Marxist political economy. Bases his analysis on a three-sector model—means of production, wage goods, and luxury goods. Relates the output of each sector to the value components of commodities—constant capital, variable capital, and surplus value.

8.27 Leff, N.H. "Rates of Return to Capital, Domestic Savings, and Investment in the Developing Countries." *Kyklos,* Vol. 28, No. 4, 1975, pp. 827-51.

Surveys theoretical and empirical studies dealing with the economywide rate of return to reproducible capital in developing countries. Also considers government project selection, and domestic savings and investment.

8.28 Lesnoy, Selig D., and Hambor, John C. "Social Security, Savings, and Capital Formation." *Social Security Bulletin,* Vol. 38, No. 7, July 1975, pp. 3-15.

The authors question whether social security decreases saving and, if so, whether this is necessarily bad.

8.29 Lim, D. "Capital Utilisation of Local and Foreign Establishments in Malaysian Manufacturing." *Review of Economics and Statistics,* Vol. 58, No. 2, May 1976, pp. 209-17.

Investigates why foreign-owned establishments in Malaysian manufacturing operate their plant and equipment longer and more intensively than their local counterparts. Claims this is due to their greater scale of operation, and the greater capital intensity of their production processes.

8.30 Lynch, Gerald Joseph. *The Effects of Export Instability on Capital Formation in the Less*

Developed Countries. Doctoral dissertation presented to the University of Kentucky, 1975. 147 pp.

Hypothesizes that countries with higher export instability borrow more to finance capital formation than do countries with low export instability. Argues that export uncertainty does not limit capital formation but affects the manner of its financing.

8.31 MacLeod, Gordon K., and Perlman, Mark, eds. *Health Care Capital: Competition and Control, Proceedings of the Capital Investment Conference*. Cambridge, Lippincott, Ballinger, 1978. 411 pp.

The authors evaluate tradeoffs and trends. They find that current regulations do not promote economic efficiency.

8.32 Madden, Carl. "Toward a New Concept of Growth: Capital Needs of a Post-Industrial Society." In *U.S. Economic Growth from 1976 to 1986: Prospects, Problems, and Patterns*. Vol. 8 - *Capital Formation: An Alternative View*. Studies Prepared for the Use of the Joint Economic Committee, U.S. Congress. Washington, U.S. Government Printing Office, pp. 1-32.

Challenges conventional concepts of growth, and views growth as transformation, with scientific knowledge as the base. Discusses implications for investment policy.

8.33 Malcomson, J.M. "Capital Utilization and the Measurement of the Elasticity of Substitution." *Manchester School of Economic and Social Studies*, Vol. 45, No. 2, June 1977, pp. 103-11.

Argues that ignoring changes in utilization of capital equipment can lead to serious errors in estimates. Presents an example of a firm whose optimal expected utilization changes with changing factor prices.

8.34 Moroney, J.R. "Are Natural Resources Capital Using? A Microanalytic Approch." *Southern Economic Journal*, Vol. 43, No. 3, January 1977, pp. 1203-17.

Develops several production models, each being based on distinct assumptions concerning capital-labor substitutability. Concludes that major sources of interindustry variation in capital intensity appear to be relative factor costs and product group characteristics, rather than natural resource requirements.

8.35 Musgrave, John C. "Fixed Nonresidential Business and Residential Capital in the United States, 1925-75." *Survey of Current Business*, Vol. 56, No. 4, April 1976, pp. 46-52.

Presents revised and extended estimates, as well as new estimates, by legal form of organization. Discusses the derivation of the estimates.

8.36 Nickell, S.J. "The Influence of Uncertainty on Investment." *Economic Journal*, Vol. 87, No. 345, March 1977, pp. 47-70.

Considers particularly the role of the government in generating uncertainty by its manipulation of policy parameters.

8.37 Park, Chong Kee. *Social Security in Korea: An Approach to Socioeconomic Development*. Seoul, Korea Development Institute, 1975. 197 pp.

Argues that a nation with a stringent retirement test and a relatively young population can use a national pension system to promote rapid economic growth over a long period of time. Analyzes impact of national pension system on aggregate saving.

8.38 Roemer, J.E. "Japanese Direct Foreign Investment in Manufactures: Some Comparisons with the U.S. Pattern." *Quarterly Review of Economics and Business*, Vol. 16, No. 2, Summer 1976, pp. 91-111.

Argues that in the coming period Japanese investment will take on more of the characteristics of U.S. investment, and reviews recent Japanese investment to support this point.

8.39 Rowley, J.C.R., and Trivedi, P.K. *Econometrics of Investment*. New York, Wiley, 1975. 205 pp.

The authors stress the limitations in current econometric work in fixed and inventory investment, surveying critical issues and potential approaches.

8.40 Savage, D. "Interpreting the Investment Intentions Data." *National Institute Economic Review*, No. 73, August 1975, pp. 41-46.

Examines the two main surveys which provide information on investment intentions in the United Kingdom. Concludes that neither survey does well in forecasting investment, but that the two surveys may improve forecasts of future investment when considered in terms of econometric relationships.

8.41 Schefold, B. "Different Forms of Technical Progress." *Economic Journal*, Vol. 86, No. 344, December 1976. pp. 806-19.

Finds that saving of raw materials tends to lower the capital-output ratio, mechanization to raise it, and saving of labor to be neutral.

8.42 Scheper, W., and Reichenbach, H. "Land Taxation, Land Prices, and the Accumulation of Capital." *Kyklos*, Vol. 28, No. 4, 1975, pp. 777-802.

The authors examine possibilities of influencing land prices and capital accumulation by taxes on rent and capital gains on land. They find that higher taxation usually increases the investment ratio and decreases the price of land.

8.43 Shapiro, Eli, and others. *Capital for Productivity and Jobs*. The American Assembly, Columbia University. Englewood Cliffs, N.J., Prentice-Hall, 1977. 203 pp.

The authors present analyses of such subjects as capital requirements; business and housing investment; investment in human capital and knowledge; and the relation of productivity to regulation and tax policy.

8.44 Simunek, R.W. "National Farm Capital Accounts." *American Journal of Agricultural Economics*, Vol. 58, No. 3, August 1976, pp. 532-42.

Quantifies farm capital flows and finance accounts. Identifies outmoded concepts and data gaps preventing accurate monitoring of economic performance. Concludes that the national farm capital accounts improve income and production analysis.

8.45 Simos, Evangolos O. *Capital Utilization. Its Measurement, and its Implications for Production Function and Economic Growth.* Doctoral dissertation presented to Northern Illinois University, 1977. 183 pp.

Deals with conceptual issues underlying capital measurements at the macroeconomic level, proposing a new method of measurement.

8.46 Snoonian, P.E., and Macbeth, T.G. "Worker and Managerial Excellence: Mexico vs. the United States." *Nebraska Journal of Economics and Business*, Vol. 14, No. 4, Autumn 1975, pp. 33-43.

The authors derive capital stock-adjusted indexes of productive efficiency which show Mexican workers to be less efficient than U.S. workers in nearly all industries sampled.

8.47 Stoneman, Colin. "Foreign Capital and Economic Growth." *World Development*, Vol. 3, No. 1, January 1975, pp. 11-26.

Based on a model linking the two variables, the author finds that aid flows and domestic savings are favorably affected by foreign capital.

8.48 Vaccara, Beatrice N. "Some Reflections on Capital Requirements for 1980." *American Economic Review*, Vol. 67, No. 1, February 1977, pp. 122-27.

Discusses the level of fixed nonresidential investment which would be in harmony with the long-run objectives of full employment, increasing productivity, environmental improvement, and energy conservation. Also deals with procedures for estimating investment requirements. Concludes that the objectives will not be achieved by 1980 unless a higher proportion of gross national product is made available for investment.

8.49 Vambery, Robert G. *Capital Investment Control in the Air Transport Industry.* Dobbs Ferry, N.Y., Oceana, 1976. 395 pp.

Presents a statistical overview of demand, supply, and technological growth of the industry. Finds that severe excess capacity is intrinsic to the industry, but that higher occupancy rates may be achieved through better scheduling.

8.50 Ward, Michael. *The Measurement of Capital. The Methodology of Capital Stock Estimates in OECD Countries.* Paris, Organisation for Economic Co-operation and Development, 1976. 148 pp.

Deals with definitions and measures of real capital, and with problems associated with the perpetual inventory model. Examines sources and methods of existing estimates.

8.51 Ward, Michael. "Problems of Measuring Capital in Less Developed Countries." *Review of Income and Wealth*, Series 22, No. 3, September 1976, pp. 207-21.

Discusses problems of distinguishing between concepts and measures of capital, as well as the differences between various stock and flow measures. Gives special attention to measuring gross capital stock and the difficulties involved in using the perpetual inventory method.

8.52 Wachtel, Paul, and others. "Capital Shortages: Myth or Reality?" *The Journal of Finance*, Vol. 31, No. 2, May 1976, pp. 269-86.

The authors discuss resource availability and financing. They consider some recent long-term forecasts of investment and saving, and discuss the financial flows inherent in the forecasts. They conclude that competition for investment resources need not result in financial distortion or capital shortage.

8.53 Yeager, L.B. "Toward Understanding Some Paradoxes in Capital Theory." *Economic Inquiry*, Vol. 14, No. 3, September 1976, pp. 313-46.

Argues that capital cannot be measured in purely physical terms since it has time and value dimensions. Attempts to dispel certain doubts on the neoclassical theory of resource allocation and income distribution.

8.54 You, Jung Keun. "Embodied and Disembodied Technical Progress in the United States, 1929-1968." *Review of Economics and Statistics*, Vol. 58, No. 1, February 1976, pp. 123-27.

Presents a model to test the importance of technical progress embodied in new capital goods as a source of productivity growth. Concludes that embodied technical progress has not been a major source of growth of output per employee hour.

Technological change

9.1 Abbott, Lewis F. *Technological Development in Industry: A Survey of Social Aspects*. A Survey of the Managerial, Organizational and Wider Social Aspects of the Technological Development Process in Manufacturing Firms. Manchester Industrial Systems Research, 1978. 131 pp.

Surveying 25 British firms, the author stresses organization-level factors that facilitate or impede technological change and discusses obstacles to use of new technology.

9.2 Ahmed, I. "The Green Revolution and Tractorisation: Their Mutual Relations and Socio-Economic Effects." *International Labour Review*, Vol. 114, No. 1, July-August 1976, pp. 83–94.

Argues that rising use of tractors, while displacing tenants and adversely affecting income distribution, is not directly related to the Green Revolution, the technology of which can provide both higher yields and more employment.

9.3 Allen, R.C. "The Peculiar Productivity History of American Blast Furnaces, 1840-1913." *Journal of Economic History*, Vol. 37, No. 3, September 1977, pp. 605–33.

Discusses the slow productivity growth between 1840 and 1870, and the subsequent rapid growth. Identifies the techniques responsible for the advance. Explains much of the American experience by changes in the composition of available iron ores.

9.4 Amann, Ronald, and others. *The Technological Level of Soviet Industry*. New Haven, Yale University Press, 1977. 575 pp.

The authors examine such industries as iron and steel, machine tools, and chemicals, and also discuss military technology and industrial process control.

9.5 Asian Productivity Organization. *Intranational Transfer of Technology*. Tokyo, Asian Productivity Organization; distributed by Unipub, New York, 1976. 161 pp.

Considers the upgrading of small industries, with particular reference to Asian countries. Discusses such topics as enterprise-to-enterprise transfer, upgrading subcontracting firms, Japan's promotion policy, and the role of a local research institute in accelerating technological transfer.

9.6 Belitsky, A. Harvey. *New Technologies and Training in Metalworking*. National Center for Productivity and Quality of Working

Life. Washington, U.S. Government Printing Office, Summer 1978. 52 p.

Describes the use of programmable controllers and programmable hand calculators. Holds that the two innovations are cost-effective in certain metal-cutting and machining operations in small-batch production. Also deals with training requirements and sources of training.

9.7 Benvignati, Anita M. *International Technology Lags: The Case of Textile Machinery.* Doctoral dissertation presented to the University of Pennsylvania, 1978. 287 pp.

Constructs performance measures and finds American producers of textile machinery to have developed only a minor portion of all innovations studied, and that U.S.-foreign lags have been relatively long. Also finds that American textile mills were slow in adopting foreign-introduced innovations.

9.8 Berndt, E.R., and Wood, D.O. "Technology, Prices, and the Derived Demand for Energy." *Review of Economics and Statistics*, Vol. 57, No. 3, August 1975, pp. 259–68.

The authors present evidence on substitutions between energy and nonenergy inputs in U.S. manufacturing, 1947-71. They find energy to have been price-responsive. They also find that energy and labor, and labor and intermediate materials were substitutes, while energy and capital were complements.

9.9 Bhalla, A.S., ed. *Technology and Employment in Industry: A Case Study Approach.* Geneva, International Labour Office, 1975. 324 pp.

A collection of essays dealing with concepts and measurement of labor intensity and capital-labor substitution possibilities in such industries as canmaking, jute processing machinery, sugar processing, copper, aluminum, and others.

9.10 Bhalla, A.S. "Technology and Employment. Some Conclusions." *International Labour Review*, Vol. 113, No. 2, March/April 1976, pp. 189–203.

Discusses some reasons for adopting capital-intensive as opposed to labor-intensive technologies, e.g., preference of the engineers involved. Argues for tax and other levies on machinery where social costs of unemployment justify them.

9.11 Cardwell, Donald. "Science and Technology: The Work of James Prescott Joule." *Technology and Culture*, Vol. 17, No. 4, October 1976, pp. 674–87.

Deals with the sources of Joule's ideas, his scientific skills, and his relationship to 19th-century industrial technology.

9.12 Christensen, Paul P. *Land, Labor, and Mechanization in the Antebellum United States Economy.* Doctoral dissertation submitted to The University of Wisconsin, 1976. 318 pp.

Discusses the role of abundance of land in the social relations of production in northern agriculture, and the development of consumption and investment patterns. Compares the linkages between agriculture and development with those in England and the South. Also examines the relation between resource abundance and mechanization in industry.

9.13 Christiansen, Ralph Ove. *An Analysis of Technological Developments in the United States Women's Hosiery Industry.* Doctoral dissertation submitted to the University of Georgia, 1976. 198 pp.

Focusing on manufacturing technology in the dyehouse, the author develops a demand function for women's hosiery. He finds that rising costs compelled introduction of new technology which, in reducing labor costs, sustained historic margins.

9.14 Coates, Joseph F. "Technological Change and Future Growth: Issues and Opportunities." In *U.S. Economic Growth from 1976 to 1986: Prospects, Problems, and Patterns.* Vol. 9—*Technological Change.* Studies Prepared for the Use of the Joint Economic Committee, U.S. Congress. Washington, U.S. Government Printing Office, pp. 33–61.

Discusses factors influencing future technological development, and policy implications.

9.15 Colombo Plan Bureau. *New Dimensions of International Technical Cooperation.* The Special Topic of the 24th Consultative Committee Meeting, Singapore, 26 November-5 December, 1974. Colombo, Colombo Plan Bureau, 1975. 221 pp.

A report discussing such subjects as technical cooperation among developing countries;

transfer of patented technology through technical assistance programs; financing of local costs; and technological self-reliance. Also presents papers on individual countries.

9.16 Cornwall, J. "Diffusion, Convergence and Kaldor's Laws." *Economic Journal*, Vol. 86, No. 342, June 1976, pp. 307–14.

Argues that differences between countries in the rate of growth of manufacturing output can be explained by differences in a country's ability to borrow technology from the industrial leaders, and by the effort made to assimilate this technology.

9.17 Critchlow, Robert V. "Technology and Labor in Electric Power and Gas Industry." *Monthly Labor Review*, Vol. 101, No. 11, November 1978, pp. 18–22.

Reports on increasing use of computers, and need for scientific and other highly trained workers. Discusses fuel inputs. Also deals with high-voltage transmission, investments, and research.

9.18 Critchlow, Robert V. "Technology and Labor in Automobile Production." *Monthly Labor Review*, Vol. 100, No. 10, October 1977, pp. 32–35.

Discusses changes such as entailed by computers, advanced production machines, and automatic assembly lines. Argues that these changes will spur hiring of many specialists but slow demand for semiskilled workers.

9.19 Ditwiler, C. Dirck. "The Substitution of Technology for Nature: The Case of Recreation." *American Journal of Agricultural Economics*, Vol. 57, No. 1, February 1975, pp. 106–10.

Suggests the possibility of expanding output and productivity through the greater development of such artificial environments as plastic snow. Concludes that economists can help to sharpen incentives for substituting artificial environments.

9.20 Dy, Fe Josefina. "Technology to Make Work More Human." *International Labour Review*, Vol. 117, No. 5, September/October 1978, pp. 543–55.

Argues that technology is not predetermined and unchangeable, but instead depends largely on its designers; and that it is possible to choose among alternative technologies that offer improved working conditions. Discusses the levels of decisionmaking which determine technology and working conditions.

9.21 "Electronics." Whole issue. *Science*, Vol. 195, No. 4283, March 18, 1977.

Presents articles discussing the revolution of electronics, the role of computers and their impact on banking and marketing, satellite communications, medical electronics, and electronics in process control and national defense. Also discusses research areas.

9.22 Evans, Robert Curtis. *Information Technology and Stock Market Organization*. Doctoral dissertation presented to Washington University, 1977. 331 pp.

Analyzes demand and supply of marketability services in the over-the-counter market and the New York Stock Exchange. Studies the relationship between efficiency and types of information produced. Finds new technologies have greatly raised efficiency and lowered access costs.

9.23 Fawcett, Clifford William. *Factors and Issues in the Survival and Growth of the U.S. Machine Tool Industry. With Emphasis on the Impact of Computer-Based Automation and Foreign Machine Tool Technology.* Doctoral dissertation presented to The George Washington University, 1976. 257 pp.

Summarizes the industry's present status, basic problems, and future prospects. Finds much antiquated equipment, lack of innovative management and trained manpower, and inability to meet foreign competition.

9.24 Goddard, Haynes C. *Managing Solid Wastes: Economics, Technology, and Institutions*. New York, Praeger, 1975. 368 pp.

Emphasizes how economic and institutional considerations determine the choice of production technologies for materials handling. Discusses the microfoundations of the materials balance approach, the use of user charges for solid waste management, and methods of increasing efficiency in collection and disposal of solid waste.

9.25 Gotsch, C.H., and others. "Linear Programming and Agricultural Policy: Micro Studies of the Pakistan Punjab." *Food Research Institute Studies*, Vol. 14, No. 1, 1975, pp. 3–105.

The authors deal with various forms of technological change and their impact on productivity, supply response, and income distribution.

9.26 Helleiner, G.K. "The Role of Multinational Corporations in the Less Developed Countries' Trade in Technology." *World Development*, Vol. 3, No. 4, April 1975, pp. 161–89.

Argues that multinational firms may increasingly sell more labor-intensive technologies and that they will probably export more appropriate technologies in manufacturing from developing countries.

9.27 Heertje, Arnold. *Economics and Technical Change*. New York, Wiley, 1977. 334 pp.

Discusses classical economics, Marx, Schumpeter, production theory, and other influences on theories of technical change. Also discusses the relation between technical change and economic growth, monopoly power, and economic policy.

9.28 Holliday, George D. *Western Technology Transfer to the Soviet Union, 1928-37 and 1966-75, With a Case Study in the Transfer of Automotive Technology*. Doctoral dissertation presented to The George Washington University, 1978. 258 pp.

Analyzes methods of Soviet acquisition of Western technology, and the impact of Soviet attitudes and policies on the process of transfer. Also analyzes changes in the orientation of Soviet policy to the international economy.

9.29 Horner, Stephen M. *Stochastic Models of Technology Diffusion*. Doctoral dissertation presented to The University of Michigan, 1977. 98 pp.

Likening the diffusion of technology to the spread of an epidemic, the author develops a family of models related to these "epidemic" processes, also discussing Schumpeterian theories in this context.

9.30 Hostettler, Pierre. *The Future of the "World Watch Industry." A Comparative Study Using Delphi*. Doctoral dissertation presented to Texas Tech University, 1976. 288 pp.

Discusses the significance and extent to which solid state watches have replaced—and will continue to replace—conventional watches. Applies the Delphi method of sequential interviews of experts to forecast trends and discusses problems encountered with this method.

9.31 Hughes, Thomas Parke. "The Science-Technology Interaction: The Case of High-Voltage Power Transmission Systems." *Technology and Culture*, Vol. 17, No. 4, October 1976, pp. 646–62.

Argues that the technology of such systems evolved from intrinsic needs of the systems rather than from science. Discusses pertinent engineering research.

9.32 Inouye, Arlene, and Suesskind, Charles. "Technological Trends and National Policy, 1937: The First Modern Technology Assessment." *Technology and Culture*, Vol. 18, No. 4, October 1977, pp. 593–621.

The authors, after reviewing recent developments, deal with the antecedents, context, sponsorship, and contents of one of the key reports by the National Resources Committee of the New Deal era.

9.33 International Labour Organization. Chemical Industries Committee. *General Report*. Geneva, 1976. 144 pp.

Discusses the effects of advanced technology on employment and occupational requirements. Also discusses training requirements, hours of work, and problems confronting the chemical industries.

9.34 International Labour Organization. Coal Mines Committee. *General Report*. Geneva, 1976. 175 pp.

Discusses mechanization and its social consequences, wage determination, vocational training, safety and health, and energy policy in relation to the coal mining industry.

9.35 International Labour Organization. Iron and Steel Committee. *Working Environment in the Iron and Steel Industry*. Geneva, 1975. 75 pp.

Discusses technological developments, manpower, and production. Examines accident prevention, industrial safety and health, and related subjects in the context of the iron and steel industry.

9.36 Jeannet, Jean-Pierre. *Transfer of Technology Within Multinational Corporations. An Exploratory Analysis*. Doctoral dissertation presented to the University of Masschusetts, 1975. 235 pp.

Shows that multinationals at first export much technology, but that at later stages of their development they increasingly import technology.

9.37 Johnson, Harry G. *Technology and Economic Interdependence*. New York, St. Martin's Press, 1975. 187 pp.

Reviews the major theories linking international trade and changing comparative advantage to investment in knowledge. Considers the multinational firm an effective tool for the economic development of poorer nations.

9.38 Johnstone, Homer, Jr. *Technology Transfer from NATO to the United States Army: An Assessment*. Doctoral dissertation presented to The George Washington University, 1975. 264 pp.

Studies four principal efforts to acquire foreign technology, involving the Main Battle Tank; MALLARD (a communications system); Band Four Head (a radio system); and RATAC (a radar system). Examines the processes, benefits, and problems associated with the transfer effort.

9.39 Kakela, Peter. "Iron Ore: Energy, Labor, and Capital Changes with Technology." *Science*, Vol. 202, December 15, 1978.

Discusses the greater dependency upon leaner ores and argues that the shift to iron ore pellets spells lower energy and labor requirements per ton of molten iron than high-grade, naturally concentrated ores.

9.40 Kaplinsky, R. "Accumulation and the Transfer of Technology: Issues of Conflict and Mechanisms for the Exercise of Control." *World Development*, Vol. 4, No. 3, March 1976, pp. 197–224.

Contends that the transfer of technology to less developed economies is typically associated with a conflict of interest between the supplier and the recipient of technology. Argues that control is allied to the power to determine the rate and type of accumulation of capital. Considers mechanisms to settle conflicts.

9.41 Khan, Mahmood Hasan, *The Economics of the Green Revolution in Pakistan*. New York, Praeger, 1975. 229 pp.

Analyzes adoption and use of the new seeds of wheat and rice, and the impact on income and employment. Recommends changes in land tenure, development of indigenous technology, and continued research on new seeds.

9.42 Kim, Linsu. *Technological Innovation, Structure, Environment, and Policy Implications: Contingency Approaches*. Doctoral dissertation presented to Indiana University, 1976. 223 pp.

Finds that indigenous technological capability correlates with age, customer and competitor influence, complexity and integration of the technology, and the overseas component of the "environment." Also finds innovative organizations to be more sensitive to the influence of the environment than less innovative ones.

9.43 Klein, Jeffrey A. *The Environmental Control Industry. An Analysis of Conditions and Prospects for the Pollution Control Industry*. Montclair, N.J., Allanheld, Osmun, 1976. 138 pp.

The authors present and evaluate macro- and microeconomic data bearing on the industry and its future. They discuss the impact on employment, economic growth, and other variables, as well as the costs and benefits of pollution controls.

9.44 Kleinberg, Susan J. "Technology and Women's Work. Lives of Working Class Women in Pittsburgh, 1870-1900." *Labor History*, Vol. 17, No. 1, Winter 1976, pp. 58-72.

Discusses the availability of domestic and municipal technologies, dealing particularly with the supply of fresh water, washing and refrigeration equipment, and with the impact of the inadequacy (or lack) of such technologies in working class households on women's work in the home.

9.45 Konz, Leo Edwin. *The International Transfer of Commercial Technology. The Role of The Multinational Corporation*. Doctoral dissertation presented to The University of Texas at Austin, 1976. 236 pp.

Surveys the studies available on the subject. Examines decisionmaking in developing nations for obtaining technological knowledge from multinationals. Evaluates problem areas, such as pricing of transferred knowledge.

9.46 Kraynick, Roger George. *Studies on the Relevance of Technological Change in the Planning of Public Projects in the Civil Works Category*. Doctoral dissertation presented to the University of Colorado, 1976. 303 pp.

Reviews water supply technologies and derives trends in unit costs associated with subproject tasks. Finds changes in unit costs to have been associated with scale economies. Also examines technological changes contributing to the reduction of physical and engineering uncertainties.

9.47 Kudrle, Robert T. *Agricultural Tractors: A World Industry Study*. Cambridge, Mass., Lippincott, Ballinger, 1975. 286pp.

Investigates such questions as price-cost margins, the realization of scale economies in production, progressiveness in design and manufacture, and quality and variety.

9.48 Lee, Daniel Tien-Pei. *Technology Transfer to Developing Countries, With Special Reference to the Economy of the Republic of China*. Doctoral dissertation presented to The University of Florida, 1977. 151 pp.

Finds uninterrupted technological progress in manufacturing, 1966-75, although its momentum declined during the world recession of 1974. Also finds that efficiency of labor rose more rapidly than of capital, and that productivity was correlated with output and capital intensity.

9.49 Levin, R.C. "Technical Change and Optimal Scale: Some Evidence and Implications." *Southern Economic Journal*, Vol. 44, No. 2, October 1977, pp. 208–21.

Examines the constraints on securing scale economies and argues that technological innovation is often needed to extend the range of output over which costs decrease.

9.50 Lincoln, Edward J. *Technical Change on the Japanese National Railways, 1949-74*. Doctoral dissertation presented to Yale University, 1978. 273 pp.

Examines factors involved in the supply of and demand for railway innovations. Considers changes in market structure, research and development, management organization, and interaction between the railroad and pertinent government bodies. Considers various constraints, such as managerial inflexibility and the early choice of narrow-gauge tracks.

9.51 Linstone, Harold A, and Sahal, Devendra, eds. *Technological Substitution: Forecasting Techniques and Applications*. New York, American Elsevier; Amsterdam, Elsevier Scientific, 1976. 288 pp.

The authors deal with the determinants of the substitution rate, applications to energy production, and diffusion processes.

9.52 Lyons, John S. *The Lancashire Cotton Industry and the Introduction of the Powerloom, 1815-1850*. Doctoral dissertation presented to the University of California, Berkeley, 1977. 284 pp.

Examines reasons for persistence of handloom beyond the middle of the 19th century. Investigates pertinent labor market conditions. Also discusses technical change in powerlooming in the general setting of 19th-century technical change.

9.53 Mann, Charles Kellogg. *Tobacco: The Ants and the Elephants*. Salt Lake City, Olympus, 1975. 176 pp.

Studies the impact of developments such as substitution of mechanical harvesters for hand labor, on the economy and people of the South.

9.54 Mascarenhas, Oswald A.J. *Towards Measuring the Technological Impact of Multinational Corporations in the Less Developed Countries*. Doctoral dissertation presented to the University of Pennsylvania, 1976. 380 pp.

Focusing on technological capabilities foreign collaborators generate indigenously, the author develops measures reflecting their learning economies; their learning efficiencies; the dimensions of scarce resource utilization efficiencies; growth in their production functions; technological progress; and performance. He uses experience in India as a test case.

9.55 McHale, John. "Resources Available and Growth." In *U.S. Economic Growth from 1976 to 1986: Prospects, Problems, and Patterns*. Vol. 4—*Resources and Energy*. Studies Prepared for the Use of Joint Economic Committee, U.S. Congress, November 16,

1976. Washington, U.S. Government Printing Office, pp. 1–50.

Examines the relation between resource use and technological change. Discusses the resource and energy outlook.

9.56 McMains, Harvey, and Wilcox, Lyle, eds. *Alternatives for Growth. The Engineering and Economics of Natural Resources Development.* Cambridge, Ballinger, 1977. 256 pp.

A collection of conference papers dealing with the technological factors that are likely to permit continued growth. Subjects include the long-term availability of resources, food production, the relation between engineering and the natural environment, and demographics.

9.57 Melvin, J.R. "Technological Change, Factor Intensity Reversals, and Trade." *Economica,* Vol. 43, No. 170, May 1976, pp. 173–80.

Considers the effects of factor intensity reversals on trade. Finds that under certain conditions, switches in specialization and trade patterns occur.

9.58 Nagel, Theodore J. "Operating a Major Electric Utility Today." *Science*, Vol. 201, September 15, 1978, pp. 985–93.

Surveys the development and availability of electric power, the planning and operation of power systems, and difficulties besetting the industry, such as environmental regulations, fuel shortages, and demand uncertainties.

9.59 Nevins, James L. and Whitney, Daniel E. "Computer-Controlled Assembly." *Scientific American*, Vol. 238, No. 2, Feb. 1978, pp. 62–74.

Describing laboratory experiments, the authors argue that computer design of assembly work must deal with such questions as how close-tolerance parts can be mated by robot-arm systems, or what a computer-controlled assembly machine must "know" to be operable. They argue that such machines could be cost-effective for low-volume assembly line production.

9.60 Norris, W.K. "Manpower Aspects of Technical Progress." *International Journal of Social Economics*, Vol. 3, No. 2, 1976, pp. 74–88.

Discusses changes in the occupational structure of employment, and how technical progress has affected employment and earnings at the industry level. Also examines the dual labor market thesis.

9.61 Olmstead, A.L. "The Mechanization of Reaping and Mowing in American Agriculture, 1833–1870." *The Journal of Economic History*, Vol. 35, No. 2, June 1975, pp. 327–52.

Attributes the rapid acceptance of reapers and mowers to the many technical improvements which raised machine productivity. Also examines the divisibility of machine services, and changing sharing and contracting patterns.

9.62 Pacey, Arnold. *The Maze of Ingenuity. Ideas and Ideology in the Development of Technology.* New York, Holmes & Meier, 1975. 350 pp.

Examines the history of technology, 1100-1870, in terms of specific objectives derived from certain aspirations and the discipline needed to attain the objective. Also discusses current directions.

9.63 Park, Ae Sil Kim. *Technological Progress, Diffusion of Technology and the International Differences in Labor Productivity.* Doctoral dissertation presented to the University of Hawaii, 1977. 110 pp.

Tests Richard Nelson's theory according to which productivity differences between developed and developing countries are linked to the persistence of large firms using older technologies in developing countries. Finds this theory to be complementary to neoclassical explanations.

9.64 Perlman, Mark, ed. *The Organization and Retrieval of Economic Knowledge: Proceedings of a Conference Held by the International Economic Association at Kiel, West Germany.* London, Macmillan, 1977. 520 pp.

The authors examine computerized catalogs and other kinds of information retrieval. They also deal with difficulties raised by "inappropriate" data.

9.65 Prasad, Aluru Jagadisch. *Export of Technology from India.* Doctoral dissertation presented to Columbia University, 1976. 189 pp.

Examines the market for technology in developing countries. Develops criteria for determining which firms should enter this

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market. Deals with market analysis. Also discusses direct investment as a form of exporting technology.

9.66 Rao, Dileep Raghuram. *A Comparison of Four Techniques of Technological Forecasting*. 1. Mathematical Programming; 2. Cross-Impact Analysis; 3. Modified Delphi; 4. Envelope Curve. Doctoral dissertation presented to the University of Minnesota, 1975. 358 pp.

Considers technologies for central-station generation of electrictiy, the cost of research and development, and the time to commercial introduction. Examines the trend in efficiency in the past, projecting it for the period 1985-2050. Applies cost-benefit analyses. Presents interviews with experts in the field, and bases his forecasts upon them.

9.67 Renfordt, Karl Heinz, editor. *One World Only: The Impact of Foreign Investment and Technological Cooperation on Development*. Singapore, Friedrich-Ebert-Stiftung, 1977. 221 pp.

The authors oppose the use of raw materials as political bargaining levers to the detriment of developing countries, and favor closer regulation of multinational corporations, as well as the transfer of technology adapted to suit the developing countries.

9.68 Richards, Ferry Evan. *Unionized Worker Adjustment to Technological Change: Foundry Industry*. Doctoral dissertation presented to the University of Arkansas, 1976. 190 pp.

Argues for a systems approach in introducing technological change, in particular for planning the impact upon manpower; full communication; permitting participation by those affected; training for changed occupations; and other factors.

9.69 Romeo, A.A. "Interindustry and Interfirm Differences in the Rate of Diffusion of an Innovation." *Review of Economics and Statistics*, Vol. 57, No. 3, August 1975, pp. 311–19.

Examines the diffusion of numerically controlled machine tools in a sample of firms in 10 industries. Finds that the rate of diffusion is positively related to the profitability of the innovation and expenditures for research and development in an industry, and inversely related to the degree of seller concentration and the scale of operation in the industry.

9.70 Rosenberg, Nathan. "American Technology: Imported or Indigenous?" *American Economic Review*, Vol. 67, No. 1, February 1977, pp. 21–26.

Argues that while originally American technology drew upon British experience, it grew ever more resource-intensive, developing new technologies, especially in woodworking. Discusses the relation between resource intensity and the evolution of standardization and mass production, particularly in capital goods industries, and the importance of relationships between producers and users of capital goods.

9.71 Rosenberg, Nathan. *Perspectives on Technology*. Cambridge, Cambridge University Press, 1976. 353 pp.

Examines the origins of American technology; the generation of new technologies; diffusion and adaptation of technology; the interaction of technology and the environment; and the growth of knowledge.

9.72 Rosenberg, Nathan. "On Technological Expectations." *Economic Journal*, Vol. 86, No. 343, September 1976, pp. 523–35.

Examines the impact of the diffusion of technological innovation upon the future course of technological change itself.

9.73 Rosenberg, Nathan. "Thinking About Technology Policy for the Coming Decade." In *U.S. Economic Growth from 1976 to 1986: Prospects, Problems, and Patterns*. Vol. 9—*Technological Change*. Studies Prepared for the Use of the Joint Economic Committee, U.S. Congress. Washington, U.S. Government Printing Office, pp. 1–32.

Discusses the relation between technology and economic growth. Examines concepts and present concerns. Proposes pertinent policies.

9.74 Rost, Ronald F. *Pollution Controls and Labor Productivity*. Doctoral dissertation presented to Northwestern University, 1978. 130 pp.

Analyzes the contribution of stricter pollution control to the apparent productivity slowdown, 1967-75. Finds a break in productivity trend at the industry level, but no shift to lower productivity industries. Also finds large impact on the slowdown from reduced construction activity. Asserts that pollution abatement investment replaced capacity expansion investment.

9.75 Sagasti, F.R. "Technological Self-Reliance and Cooperation among Third World Countries." *World Development*, Vol. 4, No. 10/11, October-November 1976, pp. 939–46.

Focusing on the role of science and technology, the author examines the concept of self-reliance in relation to the changing pattern of international relations.

9.76 Schive, Chi. *Direct Foreign Investment, Technology Transfer and Linkage Effects. A Case Study of Taiwan*. Doctoral dissertation presented to Case Western Reserve University, 1978. 226 pp.

Argues that direct foreign investment has effectively introduced foreign technology in developing new products, and imparted exporting know-how. Also shows that it has stimulated new industries.

9.77 Schmidt, C.G., and Le Heron, R.B. "Mini-Steelplants in the United States: Some Technological and Locational Characteristics." *Land Economics*, Vol. 52, No. 4, November 1976, pp. 530–44.

The authors explore the roles of labor, scrap, and energy inputs as they affect cost structures and location.

9.78 Schwartz-Cowan, Ruth. "The 'Industrial Revolution' in the Home: Household Technology and Social Change in the 20th Century." *Technology and Culture*, Vol. 17, No. 1, January 1976, pp. 1–23.

Deals with the effects of changing household technologies upon the structure of American households, the behavior of middle-class women, and the functions families performed. Also discusses diffusion of those technologies.

9.79 Sen, Sudhir. *Reaping the Green Revolution: Food and Jobs for All*. Maryknoll, N.Y., Orbis Books; New Delhi, Tata McGraw-Hill, 1975. 397 pp.

Argues the importance of large increases in agricultural productivity. Holds them to be feasible with existing scientific technologies, in view of high-yield varieties which small farmers can adopt.

9.80 Schumacher, E.F. "Technology in Human Perspective." *Nebraska Journal of Economics and Business*, Vol. 17, No. 1, Winter 1978, pp. 7–21.

Argues that technology has become "inappropriate" because of its size, complexity, cost, and the frequent hazards associated with it. Holds that either the most primitive or the most advanced technologies are available, and that the need is for an intermediate technology.

9.81 Shulman, Marvin L. *Structural and Technological Change in U.S. Industry.* Doctoral dissertation presented to Rensselaer Polytechnic Institute, 1977. 181 pp.

Using input-output techniques, the author measures shifts in capital and labor resources due to shifts in technology resulting from efforts to minimize pollution and reliance on foreign energy supplies for the 1958-67 period.

9.82 Sigurdson, J. "Rural Industrialization in China: Approaches and Results." *World Development,* Vol. 3, No. 7&8, July-August 1975, pp. 527–38.

Discusses industrial enterprises in the context of the small market areas they serve. Regards their technology as appropriate, with some of it "scaled up" and modernized and some of it "scaled down". Believes that the employment impact remains limited, but that impact on productivity and attitudes is substantial.

9.83 Singer, Hans. *Technology for Basic Needs.* Geneva, International Labour Office, 1977. 158 pp.

Discusses the relation between technology and basic needs in developing countries. Analyzes the determinants of a country's technology mix; the selection, transfer, and diffusion of appropriate new and existing technologies; problems of training; and institutional requirements for appropriate technology.

9.84 Singh, Vidya Nand. *Transfer of Technology, Technological Change and Economic*

Development: The Prototype Case of India. Doctoral dissertation presented to Georgetown University, 1975. 176 pp.

Formulates a framework of analysis to study the relationship between the transfer of technology, technological change, and economic development. Finds that India has failed to fulfill the conditions for effective technology transfer, in part because of undue restriction of the private sector where technology transfer would bear more fruit than in the public sector.

9.85 Smith, Merritt Roe. *Harpers Ferry Armory and the New Technology. The Challenge of Change.* Ithaca, Cornell University Press, 1977. 364 pp.

While narrating the development of Harpers Ferry Armory from 1798 to 1861, the author discusses such questions as why the technology used there remained highly labor intensive in the face of advancing armory technology elsewhere, and why it nevertheless remained competitive. The social factors supporting conservative technological attitudes are also discussed.

9.86 Soma, John T. *The Computer Industry: An Economic-Legal Analysis of Its Technology and Growth.* Lexington, Heath, 1976. 219 pp.

Examines the interaction of economic, technological, and legal factors affecting the industry, and the factors underlying its rapid technological growth. Projects continued growth and U.S. dominance.

9.87 Sonda, James D. *Technology Forcing and Auto Emissions Control.* Doctoral dissertation presented to The University of Michigan, 1977. 204 pp.

Discusses governmental attempts to deal with an external diseconomy by inducing private sector innovation. Examines market failure associated with technology forcing.

9.88 Stoneman, Paul. *Technological Diffusion and the Computer Revolution: The U.K. Experience.* New York, Cambridge University Press, 1976. 219 pp.

Discusses changes in technique, and the effects of the change. Investigates computer prices and quality as a basis for constructing price and quantity series free from quality changes. Also discusses the technology of computer production and technical change.

9.89 Stoner, Robert D. *The Diffusion of Technological Innovation Among Privately Owned Electric Utilities, 1950-75.* Doctoral dissertation presented to the University of California, Berkeley, 1977. 157 pp.

Investigates diffusion among 20 innovations so as to determine the influence of economic and regulatory factors. Links competitiveness, as well as easier regulatory climates, with innovativeness.

9.90 Stout, B.A., and Downing, C.M. "Agricultural Mechanization Policy." *International Labour Review,* Vol. 113, No. 3, March/April 1976, pp. 171–87.

The authors examine arguments opposing mechanization, and analyze circumstances which justify certain types and degrees of mechanization. They discuss the scope of policy, including training and education, manufacturing, distribution and repair, research and development, and other aspects.

9.91 Street, J.H. "The Technological Frontier in Latin America: Creativity and Productivity." *Journal of Economic Issues,* Vol. 10, No. 3, September 1976, pp. 538–58.

Focuses on the possibilities of interior resource development. Applies the characteristics of frontier penetration, as defined by C.E. Ayres. Criticizes current dependency theories for neglecting the potential for increasing domestic technical creativity.

9.92 Sumrall, James B. *Diffusion of the Basic Oxygen Furnace in the U.S. Steel Industry. A Vintage Capital Model.* Doctoral dissertation presented to Boston College, 1978. 178 pp.

Attempts to resolve the issue of the rate of adoption of the latest steelmaking technology by examining profit-maximizing goals and rates of return. Finds that the rate of adoption was too slow.

9.93 U.S. General Accounting Office, Comptroller General of the United States. *Manufacturing Technology—A Changing Challenge to Improved Productivity.* Report to the Congress. Washington, June 3, 1976. 136 pp.

Discusses computer-integrated manufacturing, particularly with reference to small batch production, and in the context of the lag in the American rate of increase in productivity compared with other advanced nations.

9.94 U.S. Department of Commerce, Patent and Trademark Office. *Technology Assessment and Forecast.* Eighth Report, December 1977. Washington, U.S. Government Printing Office. 138 pp.

Surveys U.S. and international patenting patterns, and discusses patents as a technological resource. Analyzes patent activity in geophysical exploration for hydrocarbons.

9.95 U.S. Department of Labor, Bureau of Labor Statistics. *Technological Change and Manpower Trends in Five Industries.* Bulletin 1856. Washington, U.S. Government Printing Office, 1975. 56 pp.

Discusses the pulp and paper, hydraulic cement, steel, and aircraft and missiles industries, and wholesale trade.

9.96 U.S. Department of Labor, Bureau of Labor Statistics. *Technological Change and its Labor Impact in Five Industries.* Bulletin 1961. Washington, U.S. Government Printing Office, 1977. 56 pp.

Discusses the apparel, footwear, motor vehicle, and railroad industries and retail trade.

9.97 U.S. House of Representatives. Committee on Science and Technology. *Review of the Technology Assessment Act.* Hearings before the Subcommittee on Science, Research, and Technology. August 3, 4; September 27; October 6, 12, 13, 19, 20, 1977; March 21, 22; April 4, 1978. Washington, U.S. Government Printing Office. 736 pp.

Includes testimony and statements by public officials and others.

9.98 U.S. Office of Technology Assessment, U.S. Congress. *Emerging Food Marketing Technologies. A Preliminary Analysis.* Washington, U.S. Government Printing Office, 1977. 88 pp.

Discusses such developments as fabricated foods, the retortable pouch, electronic checkouts, recyclable containers, and other pertinent technologies. Also discusses processing and packaging, and distribution technologies.

9.99 Vail, Hollis. "The Automated Office." *Futurist,* Vol. 12, No. 3, April 1978, pp. 73–78.

Describes some uses of automated office equipment and presents examples.

9.100 Vogely, William A. "Resource Substitution." In *U.S. Economic Growth from 1976 to 1986: Problems, Prospects, and Patterns.* Vol. 4 — *Resources and Energy.* Studies Prepared for the Use of the Joint Economic Committee, U.S. Congress. November 16, 1976. Washington, U.S. Government Printing Office, pp. 82–93.

Examines resources adequacy, and the process of substitution among materials. Also discusses institutional problems.

9.101 Ware, Harold. *The Impact of Technological Change on Regulation. The Emerging Land Mobile Communications Industry.* Doctoral dissertation presented to Cornell University, 1978. 216 pp.

Discusses the impact of regulation on progress and recent trends in telecommunications, as well as methods of technology assessment. Examines relevant institutional and technological innovations. Also ascertains desirable regulatory responses.

9.102 Wells, John V. *The Origins of the Computer Industry: A Case Study in Radical Technological Change.* Doctoral dissertation presented to Yale University, 1978. 315 pp.

Argues that the technical preconditions for the introduction of computers were ripe in the twenties, and examines reasons for the delayed introduction until after World War II. Finds that the radical nature of the computer inhibited its diffusion, and that the war speeded its adoption, which otherwise would have been greatly delayed.

9.103 Wiesner, Jerome. "Has the United States Lost Its Initiative in Technological Innovation?" *Technology Review,* Vol. 78, No. 8, July/August 1976, pp. 54–60.

Argues the indispensability of technology in adapting to changing man-made needs and changes in nature resulting from human actions. Believes, however, that the impact of changing technology on society is moderating, since new technology will increasingly deal with maintenance rather than change of living conditions.

9.104 White, L.J. "Appropriate Technology, X-Inefficiency, and a Competitive Environment: Some Evidence from Pakistan." *Quarterly Journal of Economics*, Vol. 90, No. 4, November 1976, pp. 575–89.

Finds that Pakistani entrepreneurs, being exposed to a relatively competitive environment, have been compelled to adopt "appropriate," that is, labor-intensive technologies.

9.105 Wilczinsky, J. "The East-West Technological Gap and the "Reverse" Flow of Technology." *Acta Oeconomica*, Vol. 15, No. 3-4, 1975, pp. 293–307.

Argues that the East European socialist countries are in several fields already abreast, or ahead, of the advanced capitalist countries; and that the flow of technology to the West includes sophisticated machinery, equipment, and plants as well as licenses. Foresees a tendency for new patterns of industrial specialization to emerge.

9.106 Williams, David. *Choice of Technology and National Planning. The Case of Tanzania.* Doctoral dissertation submitted to Harvard University, 1976. 186 pp.

Examines industrialization objectives to establish criteria for technology choice in a low-wage economy. Finds that technology is chosen from a wide range, and that its selection does not accord with criteria, largely due to failure of planning system.

9.107 Wills, John Michael. *Technical Change in Industrial Use of Energy Inputs.* Doctoral dissertation submitted to the University of Washington, 1976. 120 pp.

Measures "non-neutral" technical change in the postwar primary metals industry. Focuses on the effect of technical change upon the structure of production.

9.108 Wolff, E.N. "The Rate of Surplus Value in Puerto Rico." *Journal of Political Economy*, Vol. 83, No. 5, October 1975, pp. 935–49.

Measures the impact of technological change for the period 1948-63, when Puerto Rico was transformed from a preindustrial to an industrialized economy.

9.109 Yamaguchi, Mitoshi, and Binswanger, Hans P. "The Role of Sectoral Technical Change in Development: Japan, 1880-1965." *American Journal of Agricultural Economics*, Vol. 57, No. 2, May 1975, pp. 269–78.

The authors argue that technical change in the nonagricultural sector contributed more to per capita growth than in agriculture, and draw conclusions for developing countries.

9.110 Yamamura, K. "Success Illgotten? The Role of Meiji Militarism in Japan's Technological Progress." *Journal of Economic History*, Vol. 37, No. 1, March 1977, pp. 113–35.

Argues that the militaristic orientation and the wars fought against China and Russia contributed significantly to Japan's technological development during 1868-1911. Reexamines the view that Meiji militarism was basically detrimental to economic growth.

9.111 Yellowitz, Irwin. "Skilled Workers and Mechanization The Lasters in the 1890's." *Labor History*, Spring 1977, pp. 197–213.

Explores the impact of lasting machinery upon skilled lasters and their union, and the adaptive policies the lasters attempted to pursue.

Research and development; innovation

10.1 Abernathy, William. *The Productivity Dilemma. Roadblocks to Innovation in the Automobile Industry.* Baltimore, John Hopkins University Press, 1978. 267 pp.

Investigates reasons why productivity and mass production in the auto industry have caused innovation to wane. Discusses technological change in the industry. Presents a model of innovation and process change. Discusses at length the evolution of automotive engine plants and automotive assembly plants as examples of rigidity and flexibility in industrial design.

10.2 Abernathy, William J. and Utterback, James M. "Patterns of Industrial Innovation." *Technology Review*, June/July 1978, pp. 41–47.

The authors explore the changing character of innovation as an enterprise matures, emphasizing the transition from "radical" to "evolutionary" innovation, and its management.

10.3 Arndt, Thomas M. and others, *Resource Allocation and Productivity in National and International Agricultural Research*. Minneapolis, University of Minnesota Press, 1977. 617 pp.

The authors consider recent evidence on the returns to investment in national and international agricultural research systems and the relevance of social and economic factors for the organization of such systems. They deal with productivity of national research systems in both developed and developing nations, and productivity of international systems.

10.4 Aresvik, Oddvar. *The Agricultural Development of Jordan*. New York and London, Praeger, 1976. 375 pp.

Discusses the nature and function of agricultural research and extension services and other educational institutions. Stresses the effect on growth of well-adapted high-yield crop technology.

10.5 Balz, Manfred Wilhelm. *Invention and Innovation under Soviet Law: A Comparative Analysis*. Lexington, Mass., Heath, 1975. 187 pp.

Considers various means of promoting science and technology in the Soviet Union, ranging from research and development to ultimate application. Evaluates the organization of technological improvements under Western capitalism and in the Soviet Union through a comparison of legal structures.

10.6 Bender, Richard, and Parman, John. "The Factory without Walls: Industrialization in Residential Construction." *California Management Review*, Vol. 18, No. 3, Spring 1976, pp. 46–56.

The authors argue that factory-built housing will likely remain unimportant in the United States, holding that building products will be improved for more direct use by on-site workers.

10.7 Berliner, Joseph S. *The Innovation Decision in Soviet Industry*. Cambridge, Mass., MIT Press, 1976. 561 pp.

Evaluates the Soviet economy's capacity to generate technological innovations. Concludes that the innovation decision is made in terms of four properties of the economic system: Prices, decision rules, incentives, and organization.

10.8 Binhammer, H.H., and Williams, Jane. *Deposit-Taking Institutions: Innovations and the Process of Change*. Ottawa, Economic Council of Canada, 1976. 146 pp.

The authors detail innovations and explain causes and time factors in their introduction. They also deal with the transition to automated transfer mechanisms.

10.9 Binswanger, Hans P., and others. *Induced Innovation. Technology, Institutions, and Development*. Baltimore, Johns Hopkins University Press, 1978. 423 pp.

The authors relate the historical analysis of the sources of technical change to the norms of research resource allocation, and combine varying approaches to the analysis of the rate and direction of technical change into one investment framework. They also explore the implications of the concept of induced innovation for development theory.

10.10 Bodoff, Joan, and others. *The Effect of Innovation on Productivity in the Service Industries*. Vol. 1, *Summary Report*. Vol. 2, *Analytical Paper*. Vol. 3, *Annotated Bibliography*. Washington, Office of National R & D Assessment, National Science Foundation, August 1975.

The authors examine the treatment in the literature of service productivity measures, innovation, and the effect of innovation on measured productivity and other variables. The bibliography contains over 1,700 entries.

10.11 Boncher, William H. *Innovation and Technical Adaptation in the Russian Economy. The Growth in Unit Power of the Russian Mainline Freight Locomotive*. Doctoral dissertation presented to Indiana University, 1976. 639 pp.

Shows that the high rate of growth in Russian freight traction requirements was met by the input of very large freight locomotives. Input-output ratios tended to decline but the decline had little effect on the growth rate of real gross national product.

10.12 Boyce, James K., and Evenson, Robert E. *Agricultural Research and Extension Programs: National and International*. New York, Agricultural Development Council, 1975. 229 pp.

The authors survey the literature and indicate factors determining investment in research and extension services.

10.13 Bredahl, M., and Peterson, W. "The Productivity and Allocation of Research: U.S. Agricultural Experiment Stations." *American Journal of Agricultural Economics*, Vol. 58, No. 4, Part I, November 1976, pp. 684–92.

The authors present estimates of the marginal product and internal rates of return, by commodity group. They conclude that the payoff to research is greatest for commodities with the largest absolute value of output.

10.14 Brumm, Harold J., Jr. and Dick, Daniel T. "Federal Environmental Policy and R&D on Water Pollution Abatement." *American Economic Review*, Vol. 66, No. 2, May 1976, pp. 448–53.

The authors argue that effluent charges are preferable to private bargaining or regulatory devices, since charges are likely to stimulate improvements in water pollution abatement technology.

10.15 Bryant, Lynwood. "The Development of the Diesel Engine." *Technology and Culture*, Vol. 17, No. 3, July 1976, pp. 423–31.

Differentiating between invention, development, and innovation, the author discusses the controversies that surrounded Rudolf Diesel's role, the early evolution of the diesel engine, and the nature of technological development.

10.16 Bwambale, Henry E. *Agricultural Research and Technology Diffusion by Foreign Agri-Business Firms in Kenya*. Doctoral dissertation presented to Harvard University, 1978. 207 pp.

Based on six case studies, the author explores underlying factors, especially the extent of the agricultural research base among parent firms and its influence on R&D in Kenya.

10.17 Caglarcan, Erol. *Economics of Innovation in the Pharmaceutical Industry*. Doctoral dissertation presented to The George Washington University, 1977. 133 pp.

Examines the evolution of the industry and the relation of input into R&D to output. Also deals with earlier studies and their rationale.

10.18 Creamer, Daniel B. *Overseas Research and Development by United States Multinationals, 1966-1975. Estimates of Expenditures and a Statistical Profile*. New York, The Conference Boards, 1976. 130 pp.

Based on a 1971-72 survey, the author presents pertinent data, finding that U.S. firms' research abroad is mainly conducted in Canada, the United Kingdom, and West Germany; and that the entire R&D effort abroad contributes to technology transfer to foreign nations.

10.19 Dailey, Robert C. *Research and Development Effectiveness at the Team and Individual Scientist Levels. An Empirical Study*. Doctoral dissertation presented to the University of Colorado, 1977. 411 pp.

Examines such "predictors" as locus of control, collaboration, coordination, team size, task uncertainty, and task interdependence. Finds strong positive relationships between team cohesiveness and team collaboration and productivity.

10.20 Davidson, W.H. "Patterns of Factor-Saving Innovation in the Industrialized World." *European Economic Review*, Vol. 8, No. 3, October 1976, pp. 207–17.

Measures broad trends in labor-, material-, and capital-saving innovations in eight European nations, the United States, and Japan. Correlates international variations in these trends with variations in relative factor cost levels. Concludes that a high correlation significantly influences innovation trends.

10.21 Eckaus, Richard S. *Appropriate Technologies for Developing Countries*. Washington, National Academy of Sciences, 1977. 140 pp.

Examines such subjects as technological opportunities and transfer of technical information; technological choices in agriculture, services, and small-scale enterprise; and policies for promoting choices of appropriate technologies.

10.22 Evenson, Robert E., and Kislev, Yoav. "Investment in Agricultural Research and Extension: A Survey of International Data." *Economic Development and Cultural Change*, Vol. 23, No. 3, April 1975, pp. 507–21.

The authors present compilation of international data on research and extension activities aimed at raising agricultural productivity. They provide data on numbers of scientists and extension workers, and on scientific publications, considered a proxy of knowledge creation. They develop a knowledge production function.

10.23 Federal Republic of Germany, Minister for Research and Technology. *The Programme of the Federal Government for the Promotion of Information and Documentation (I&D-Programme) 1974-77*. Frankfurt, 1976. 125 pp.

Presents the program to initiate and support the development of scientific and technical information services. Discusses the rapid growth in literature, the demand for information services, the current state of information services, and the role various public institutions play in the program.

10.24 Gerstenfeld, Arthur. *Innovation: A Study of Technological Policy*. Washington, University Press of America, 1977. 209 pp.

Examines the innovative process and techniques, primarily in the United States and West Germany. Discusses the role of government, with emphasis on a German law affecting inventors, as well as aspects of German and U.S. patent policies.

10.25 Gold, Bela. "Research, Technological Change, and Economic Analysis: A Critical Evaluation of Prevailing Approaches." *Quarterly Review of Economics and Business*, Vol. 17, No. 1, Spring 1977, pp. 7–29.

Evaluates the concepts, measures, and findings of a large sample of studies of the economic effects of research and technological innovations. Places special emphasis on studies using production functions, total factor productivity, and input-output approaches.

10.26 Greenwald, Howard P. "Scientists and the Need to Manage." *Industrial Relations*, Vol. 17, No. 2, May 1978, pp. 156–67.

Deals with the impact of managerial activities (rather than role satisfaction) on the career satisfaction of scientists. Finds that the exercise of the managerial function is valued by highly professionalized employees, and contributes to their career satisfaction.

10.27 Hastings, T. "The Characteristics of Early Adopters of New Technology: An Australian Study." *Economic Record*, Vol. 52, No. 138, June 1976, pp. 239–50.

Investigates the economic characteristics of Australian wool textile firms which introduced new technology most quickly. Finds that large and profitable firms predominate among the early adopters.

10.28 Heaton, George, Jr.; Holloman, Herbert J.; and others. *Government Involvement in the Innovation Process*. A Contractor's Report to the Office of Technology Assessment, U.S. Congress. Washington, U.S. Government Printing Office, 1978. 69 pp.

The authors discuss issues in designing future programs affecting innovation, including the promotion of technological innovation for economic purposes, using innovation for social goals, and controlling the adverse consequences of new technology.

10.29 Helms, Robert B., ed. *Drug Development and Marketing: A Conference Sponsored by the Center for Health Policy Research of the American Enterprise Institute*. Washington, American Enterprise Institute for Public Policy Research, 1975. 300 pp.

The authors examine the premise that advertising and promotional activity expenditures are wasteful. They also discuss the contention that much of research in the industry is unproductive, and is undertaken merely to produce a substitute for competing products, rather than to discover new drugs.

10.30 Hewlett, Richard G. "Beginnings of Development in Nuclear Technology." *Technology and Culture*, Vol. 17, No. 3, July 1976, pp. 465–78.

Deals with the relation of engineering to scientific discovery and experiment, especially discussing the Manhattan Project.

10.31 Hyde, Charles K. *Technological Change and the British Iron Industry, 1700-1870*. Princeton, Princeton University Press, 1977. 283 pp.

Examines the diffusion of innovations and estimates the production costs of different ironmaking processes. Finds that technology advanced through a gradual process involving clusters of interrelated changes, rather than through a series of specific innovations.

10.32 Knezo, Genevieve J. *The Psychological and Social Science Research Support Programs of the National Science Foundation*. A background report prepared for the Subcommittee on Science, Research, and Technology of the Committee on Science and Technology, U.S. House of Representatives, by the Library of Congress, Washington, U.S. Government Printing Office, 1977. 168 pp.

Deals with the origins and evolution of the National Science Foundation support program; the importance of the program for academic institutions; the complexities of determining priorities; and problem-oriented research.

10.33 Leonardson, Gene S., and Nelson, David M. *Rural Oriented R&D Projects Supported by ETA/USDL. A Review and Synthesis*. Corvallis, Ore., Institute for Manpower Studies, University of Oregon, 1977. 134 pp.

Discussing the findings from R&D projects, the authors examine the demand for rural labor, including such factors as farm mechanization and wages; the supply of rural labor, including educational and migration factors; and public employment programs in rural areas.

10.34 Long, T. Dixon, and Wright, Christopher, eds. *Science Policies of Industrial Nations: Case Studies of the United States, Soviet Union, United Kingdom, France, Japan, and Sweden*. New York, Praeger, 1975, 232 pp.

A collection of papers discussing the centralized management of science in Russia; the conflict between freedom and control in the United States and Great Britain; and linkages among science, technology, history, and ideology in France, Japan, and Sweden.

10.35 Lowinger, Thomas C. "The Technology Factor and the Export Performance of U.S. Manufacturing Industries." *Economic Inquiry*, Vol. 13, No. 2, June 1975, pp. 221–36.

Explains the U.S. comparative advantage in manufactured goods in terms of the differences in industries' research intensity.

10.36 Mansfield, E., and Wagner, S. "Organizational and Strategic Factors Associated with Probabilities of Success in Industrial R and D." *Journal of Business*, Vol. 48, No. 2, April 1975, pp. 179–98.

The authors first define three probabilities of success. They study the effects of several factors on these probabilities. In particular, they examine the degree of integration between R&D and marketing, and the degree of formality and quantification of the R&D selection system.

10.37 Mansfield, Edwin, and others. *The Production and Application of New Industrial Technology*. New York, Norton, 1977. 220 pp.

The authors examine the social and private rates of return from industrial innovations; the determinants of development costs; the relationships between innovation, development, and size of firm; and the speed of application of new technology.

10.38 Okada, Richard F. *The Skill Mix of an Effective First Level Navy RDT&E Manager*. Doctoral dissertation submitted to the University of Southern California, 1976. Pp. not indicated.

Based on a survey, the author investigates whether effective management is validated by a hierarchical leadership theory (based on human relations, technical and conceptual/administrative skills) or by the influence of scientific culture upon professionals. Finds the hierarchical concept to be confirmed.

10.39 Oster, S.M., and Quigley, J.M. "Regulatory Barriers to the Diffusion of Innovation: Some Evidence from Building Codes." *Bell Journal of Economics*, Vol. 8, No. 2, Autumn 1977, pp. 361–77.

The authors explain the "permissibility" and timing of four innovations across a sample of local jurisdictions, finding their adoption to be explained by certain attributes of local firms, unions, building officials, and housing demand.

10.40 Paolillo, Joseph Guy Peter. *Technical Innovation in Organizational R&D Subsystems*. Doctoral dissertation submitted to the University of Oregon, 1977. 113 pp.

Examines such subsystems as the number of research scientists and engineers; number of supervisory levels; project teams; technological forecasting activities; and budget. Evaluates their relative importance for innovation.

10.41 Patel, A.S. "New Technology in Indian Agriculture." *Artha Vikas*, Vol. 11, No. 2, July 1975, pp. 27–53.

Argues that the performance of new technology was unsatisfactory for the period 1966-1973. Attributes the failure to the absence of pertinent regional research and such crucial inputs as irrigation water. Points to increases in productivity in regions placing most emphasis upon research.

10.42 Pearl, D.J., and Enos, J.L. "Engineering Production Functions and Technological Progress." *Journal of Industrial Economics*, Vol. 24, No. 1, September 1975, pp. 55–72.

The authors replicate a study of production functions in the transport of crude petroleum pipelines done 17 years earlier, but with current technology. They find that improvements have occurred in the use of *all* resources.

10.43 Ranftl, R.M. *R&D Productivity—Study Report*. Culver City, California, Hughes Aircraft Company, 1978. 183 pp.

Presenting the findings of a 5-year study, the author emphasizes the link between effective management and productivity.

10.44 Romeo, A.A. "The Rate of Imitation of a Capital-Embodied Process Innovation." *Economica*, Vol. 44, No. 173, February 1977, pp. 63–69.

Shows that differences in industry reaction to innovations may be explained in part by such industry characteristics as degree of competitiveness.

10.45 Ronstadt, Robert Carillo. *R&D Abroad. The Creation and Evolution of Foreign Research and Development Activities of U.S.-Based Multinational Enterprises*. Doctoral dissertation presented to Harvard University, 1975. 235 pp.

Surveying 42 R&D units, the author finds them to have been established to help transfer technology; to develop new products expressly for the foreign market; to develop new products for both the foreign and U.S. markets; or to generate long-term technology expressly for the U.S. parent.

10.46 Rosenberg, Nathan. "Problems in the Economist's Conceptualization of Technical Innovation." *History of Political Economy*, Vol. 7, No. 4, Winter 1975, pp. 456–81.

Examines the distinctions drawn among the separate stages of the innovation process. Argues that the concepts employed distort the perception of technological events, making it difficult validly to relate technological change to economic growth.

10.47 Schott, K. "Investment in Private Industrial Research and Development in Britain." *Journal of Industrial Economics*, Vol. 25, No. 2, December 1976, pp. 81–99.

Finds that techniques discovered from R&D become technically obsolete at a rate that is less than the rate of physical deterioration of innovations embodying the techniques. Presents annual estimates of private industrial R&D and its related technical knowledge stock for 1948-70.

10.48 Schrag, Peter. "Rubber Tomatoes." *Harper's*, Vol. 256, No. 1537, June 1978, pp. 24–29.

Discusses the relationship between research and agribusiness, and the impact of technological changes on farming and farm laborers.

10.49 Schwartz, Mark Alan. *The Imitation and Diffusion of Industrial Innovations*. Doctoral dissertation presented to the University of Pennsylvania, 1978. 231 pp.

Examines relationships between costs to innovators and costs to imitators, studying 28 innovations. Also examines the relationship between patents, firm size, and imitation costs. Studies international differences in the rate of innovation, and notes high relation between R&D and innovative output.

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10.50 **Schwartz, Sandra Lynn.** *An Assessment of the Economic Impact and Modes of Evaluation of Research and Development.* Doctoral dissertation presented to The University of British Columbia, 1976. No pp. indicated.

Analyzes determinants and practices of R&D investment decisions in Canada. Investigates the effects of R&D on shifting the resource shares of labor, capital and energy. Identifies environmental conditions and selection processes.

10.51 Schwartzman, David. *The Expected Return from Pharmaceutical Research: Sources of New Drugs and the Profitability of R&D Investment.* Washington, American Enterprise Institute for Public Policy Research, 1975. 57 pp.

Argues that controlling prices of drugs may have adverse effects on innovation, and that encouraging innovation is more important than the alleged monopoly problem in the pharmaceuticals industry. Applies benefit-cost analysis to calculate whether investment in R&D was justified during a recent period.

10.52 Schwartzman, David. *Innovation in the Pharmaceutical Industry.* Baltimore, Johns Hopkins University Press, 1976. 399 pp.

Examines the institutions and methods involved with the R&D of new drugs. Argues that competition is strong, and the evidence of monopoly power inconclusive.

10.53 Smith, Thomas M. "Project Whirlwind: An Unorthodox Development Project." *Technology and Culture*, Vol. 17, No. 3, July 1976, pp. 447–64.

Discusses the evolution of an R&D project involving airplane stability and control analysis in World War II.

10.54 Solo, Robert A. *Organizing Science for Technology Transfer in Economic Development.* East Lansing, Michigan State University Press, 1975. 224 pp.

Discusses the activities of government agencies and R&D centers in France, England, and The Netherlands, and the basic considerations in making technical assistance available to developing countries.

10.55 Stahl, Michael John. *Innovation and Productivity in Research and Development: Some Associated Individual and Organizational Variables.* Doctoral dissertation presented to Rensselaer Polytechnic Institute, 1975. 276 pp.

Defining innovation as output, and productivity as quantity of innovation, the author applies peer ratings as criteria measures, and tests organizational variables, culled from the empirical literature, for their relationship with the criteria. Finds rewards for innovation to be positively related to innovation, as well as frequency of communication with other scientists or engineers.

10.56 Thurow, Lester C. "Eight Imperatives for Research and Development." *Technology Review*, Vol. 80, No. 3, January 1978. pp. 64–71.

Classifies R&D projects in terms of basic capability, mission orientation, and massive mobilization. Proposes changes in funding categories, as well as cost-benefit analyses, particularly for mission-oriented projects. Discusses many other problems impinging upon R&D.

10.57 United Nations. *The Role of the Patent System in the Transfer of Technology to Developing Countries.* New York, 1975, 69 pp.

Describes salient characteristics of national patent legislation, and discusses international treaties pertaining to the patent system. Also discusses certain characteristics of patent grants, such as the structure of ownership, uses, and distribution by field of technology of patents.

10.58 U.S. Congress, Joint Economic Committee, Subcommittee on Priorities and Economy in Government. *Priorities and Efficiency in Federal Research and Development.* A Compendium of Papers. October 29, 1976. Washington, U.S. Government Printing Office. 115 pp.

Presents studies on the relation between defense-related and civilian-oriented R&D priorities; the effectiveness of Federal civilian-oriented R&D; the relation between Federal, State, and local government support for R&D; and Federal support of R&D in the private sector.

10.59 U.S. House of Representatives, Committee on Science and Technology. *Federal Research* *and Development Expenditures and the National Economy*. Hearings before the Subcommittee on Domestic and International Scientific Planning and Analysis, April 27, 28, 29; May 4, 5, 1976. Washington, U.S. Government Printing Office. 706 pp.

Includes statements and testimony by academic experts and public officials.

10.60 Omitted

10.61 U.S. National Science Foundation. *Improving Productivity*. Volume III of RANN 2, *Realizing Knowledge as a Resource*. Proceedings of the Second Symposium of Research Applied to National Needs. Washington, November 7-9, 1976. 133 pp.

A collection of papers dealing with specific innovations in industries, as well as industry-university cooperation in solving specific industry problems. Also includes papers on long-term output and productivity trends, research issues in manufacturing, entrepreneurship and innovations, and related topics.

10.62 U.S. National Science Foundation. *Science Indicators, 1976*. Washington, U.S. Government Printing Office, 1977, 304 pp.

Presents text, charts, and statistics on the resources for R&D, innovation, science and engineering personnel, and public attitudes toward science and technology.

10.63 Wad, Atul. *The Political Economy of Innovation in Developing Countries. A Case Study of Dairy Development in India*. Doctoral dissertation presented to Northwestern University, 1978. 264 pp.

Discusses the problem of "choice of technique" in terms of beneficiaries; organizational and institutional structures; urban-rural and private-sector/bureaucracy relationships; and technological factors. Finds participation by marginal farmers and landless laborers to have been minimal. Also finds organizational and political factors to have been obstacles to success.

Management and other organizational factors

11.1 Agnello, R.J., and Donnelley, L.P. "Property Rights and Efficiency in the Oyster Industry." *Journal of Law and Economics*, Vol. 18, No. 2, October 1975, pp. 521–33.

The authors test the effect of property rights on labor productivity using data from the U.S. East and Gulf Coast oyster industry. They argue that common property rights adversely affect economic efficiency in comparison with private rights.

11.2 Akin, William E. *Technology and the American Dream: The Technocrat Movement, 1900-1914*. Berkeley, The University of California Press, 1977. 227 pp.

Tracing the evolution of the movement, the author emphasizes the 1932-34 debates. Argues that Technocracy failed in part because of its inability to reconcile its ideas with democracy.

11.3 Al-Moonef, Ibrahim Abdullah. *Transfer of Management Technology to Developing Nations: The Role of Multinational Oil Firms in Saudi Arabia*. Doctoral dissertation presented to Indiana University, 1977. 524 pp.

Finds that Saudi managers working for American firms differ less from American managers than from Saudis managing Saudi firms in attitude. Details the personal characteristics of the former class of Saudi managers, as well as the efforts made by American firms to integrate Saudis. Holds that Western managerial skills are accessible to nationals of developing states.

11.4 Alamgir, Mohiuddin. "Some Aspects of Bangladesh Agriculture: Review of Performance and Evaluation of Policies." *Bangladesh Development Studies*, Vol. 3, No. 3, July 1975, pp. 261-300.

Argues that the most feasible way of improving agriculture is through the formation of production cooperatives because only then can economies of scale be secured by introducing new technology.

11.5 Bacon, Robert, and Eltis, Walter. *Britain's Economic Problem: Too Few Producers*. New York, St. Martin's Press, 1978. 255 pp.

The authors discuss the rapid growth of the nonmarket sector, with resultant pressures on resources. They examine public expenditures, presenting comparisons with the United States and Canada. They also assess the chances for success of recent economic policies.

11.6 Barkin, Solomon, ed. *Worker Militancy and Its Consequences, 1965-1975: New Directions in Western Industrial Relations.* New York and London, Praeger, 1975. 408 pp.

A collection of essays examining the upsurge of worker militancy and its impact on the industrial relations system in Europe, Canada, and the United States. A major conclusion is that unions are pressing for, and achieving, greater participation in decisionmaking, especially in Western Europe.

11.7 Bass, Bernard B., and others. "Management Styles Associated with Organizational Task, Personal, and Interpersonal Contingencies." *Journal of Applied Psychology*, Vol. 60, December 1975. pp. 720-29.

The authors find that the consultative management style, in which problems are discussed with subordinates before making decisions, is most closely associated with quality performance and job satisfaction.

11.8 Bates, Robin, and Fraser, Neil. *Investment Decisions in the Nationalised Fuel Industries.* New York and London, Cambridge University Press, 1975 192 pp.

The authors discuss the institutional framework within which nationalized fuel industries operate; theoretical problems of public investment; problems in determining optimum plant mix; and related topics.

11.9 Batt, William L., Jr., and others. *Directory of Labor-Management Committees.* Edition 2. National Center for Productivity and Quality of Working Life. Washington, U.S. Government Printing Office, Spring 1978. 212 pp.

The authors identify and briefly describe the formation of committees, and their cooperation in adapting to productivity-related problems.

11.10 Batt, William L., Jr., and Weinberg, Edgar. "Labor-Management Cooperation Today." *Harvard Business Review*, Vol. 56, No. 1, January-February 1978, pp. 96–104.

The authors analyze labor-management cooperation. They discuss committee involvement in such problem areas as energy, conservation, employee morale, and work methods.

11.11 Bell, Daniel. *The Cultural Contradictions of Capitalism.* New York, Basic Books, 1976. 301 pp.

Deals with the impact of modern culture upon economic and social behavior, particularly with the problems arising from managing complex organizations when social values are predominantly hedonistic.

11.12 Bell, David. "Manpower in Corporate Planning." *Long Range Planning*, Vol. 9, No. 2, April 1976, pp. 31–37.

Discusses the objectives of manpower planning, and such elements of it as analysis, forecasting demand and supply, and financial constraints. Also discusses the impact of productivity change.

11.13 Bernstein, Paul. "Necessary Elements for Effective Worker Participation in Decision Making." *Journal of Economic Issues*, Vol. 10, No. 2, June 1976, pp. 490–522.

Discusses kinds of participation, distinguishing the degree of control by employees over particular decisions; the issues over which such control is exercised; and the organizational level. Also deals with such elements of participation as access to management level information.

11.14 Bjarnason, Emil Grover. *Mechanisation and Collective Bargaining in the British Columbia Longshore Industry.* Doctoral dissertation presented to Simon Fraser University (Canada), 1976. Pp. not indicated.

Discusses a collective bargaining agreement regulating mechanization, and treats it as a trade of work-maximizing restrictive work rules for income maximization. Evaluates whether this has raised output, lowered costs, and raised wages. Finds this to have been the case.

11.15 Bluestone, Irving. "Creating a New World of Work." *International Labour Review*, Vol. 115, No. 1, January-February 1977, pp. 1–10.

Believes skepticism over worker participation schemes will diminish with time. Refers to two major programs initiated by the United Automobile Workers union which could enhance the dignity of workers on the job, involve them significantly in making decisions, and make for democratization in the workplace.

11.16 Broehl, Wayne G. *The Village Entrepreneur: Change Agents in India's Rural Development.* Cambridge, Harvard University Press, 1978. 228 pp.

Defines the nature and locus of entrepreneurship, exploring the role of rice millers and fertilizer distributors. Discusscs entrepreneurial training and other factors promoting entrepreneurship.

11.17 Brown, Bob Sinclair. *Participative Management: Practices and Attitudes.* Doctoral dissertation submitted to The American University. 1977. 229 pp.

Measures preferences of workers and managers for 16 participative forms of practice, including setting own work time; participation in personnel action; solving organizational problems; and election of representatives to policymaking bodies. Finds no "overwhelming" desire for participation.

11.18 Bryson, Philip J. *Scarcity and Control in Socialism: Essays on East European Planning.* Lexington, Mass., Heath, 1976. 202 pp.

Discusses such questions as decentralization and organizational effectiveness; pricing; investment and the degree of control by central authority; integration of socialist economies; and differences in national interests.

11.19 Caves, Richard E., and Uekusa, Masu. *Industrial Organization in Japan.* Washington, The Brookings Institution, 1976. 169 pp.

The authors compare Japanese and American industrial systems. They discuss several forms of technical inefficiency, while noting the exceptional productivity advances that have been achieved in Japan. They conclude that productivity is more likely to be enhanced by shifting capacity away from small establishments than by promoting very large plants.

11.20 Cipolla, Carlo M. *Before the Industrial Revolution: European Society and Economy, 1000-1700.* New York, Norton, 1976. 326 pp.

Discusses the factors of production, and productivity. Also discusses technological change, business practices, and organizational forms.

11.21 Cline, W.R., and Sargen, N.P. "Performance Criteria and Multilateral Aid Allocation." *World Development*, Vol. 3, No. 6, June 1975, pp. 385–91.

The authors propose a method for allocating aid among countries based on need and performance, measured in terms of relative effort to save, export, control inflation, and make efficient use of resources.

11.22 Cochran, Thomas C. *200 Years of American Business.* New York, Basic Books, 1977. 288 pp.

Discusses changes in business management, focusing on human relations and organizational innovation. Deals with such topics as innovations, competence, rationalizing the large firm, and government/business relations.

11.23 Cohen, S.I. *Production, Manpower and Social Planning, With Applications to Korea.* Rotterdam, Rotterdam University Press, 1975. 234 pp.

Presents a model for development planning, integrating manpower planning and social planning.

11.24 Committee for Economic Development. *Improving Management of the Public Work Force.* A Statement by the Research and Policy Committee of the CED. New York, November 1978. 138 pp.

Recommends goals for public service and discusses a framework for public personnel management, the role of the manager, performance standards, and collective bargaining.

11.25 De Kadt, Maarten. *The Development of Management Structures: The Problem of the Control of Workers in Large Corporations.* Doctoral dissertation presented to The New School for Social Research, 1976. 254 pp.

Explores the relation between control over labor and the changing size and structure of U.S. corporations. Discusses managerial principles developed by such authors as Frederick Taylor, Elton Mayo, and Alfred Sloan, and argues their inadequacy. Deals with new managerial principles of labor control.

11.26 Drucker, Peter F. "The Coming Rediscovery of Scientific Management." *The Conference Board Record*, Vol. 13, No. 6, June 1976, pp. 23–27.

Recapitulates the thought of Frederick Taylor as advocate of high wages, elimination of undue physical strain, and full personal development. Notes the general ignorance of Taylor's thought and points to ways of applying it today.

11.27 Eckstein, Alexander. *China's Economic Revolution*. New York, Cambridge University Press, 1977. 340 pp.

Explores character of key inputs, such as resources from the past, motivating ideology, and institutional transformation. Assesses the extent to which objectives were attained.

11.28 Faxen, Karl-Olof. "Disembodied Technical Progress: Does Employee Participation in Decisionmaking Contribute to Change and Growth?" *American Economic Review*, Vol. 68, No. 2, May 1978, pp. 131–34.

Summarizing a study covering experiences in a number of firms, the author reports that productivity improvements depend on improved coordination and on joint problem solving leading to improved operating methods; and that worker participation leads to social, hence technical, learning.

11.29 Fein, Mitchell. "Improving Productivity by Improved Productivity Sharing." *The Conference Board Record*, Vol. 13, No. 6, July 1976, pp. 44–49.

Asserting that management philosophy is based on adversary relationships at the work place, the author argues that antagonism should be reduced by defining and working for congruent goals, and by motivating workers by tying pay to productivity improvement.

11.30 Forrester, Jay W. *Collected Papers of Jay W. Forrester*. Cambridge, Wright-Allen Press, 1975. 284 pp.

Deals with the application of the computer to corporate, industrial, and urban national policy design. Provides a method to quantify and program for the computer the analysis of decisionmaking. Also discusses market growth as influenced by capital investment and industrial dynamics.

11.31 Friedman, Milton, and others. *The Business System: A Bicentennial View*. Hanover, N.H., Amos Tuck School of Business Administration, 1977. 91 pp.

The authors consider issues encountered by managers of large, complex organizations. They deal with economics and social progress; modern institutions and economic freedom; and technology and the quality of life.

11.32 Gafsi, Salem. *Green Revolution: The Tunisian Experience*. Doctoral dissertation presented to the University of Minnesota, 1975. 285 pp.

Examines reasons of wheat growers for adopting high-yielding varieties. Finds that the local production environment, especially topography, mostly explains such adoption, while market-related factors explain variations among farmers.

11.33 Gallagher, William E., and Einhorn, Hillel J. "Motivation Theory and Job Design." *Journal of Business*, Vol. 49, No. 3, July 1976, pp. 358–73.

The authors describe major job design approaches, and explore the motivational assumptions underlying them. They also review some job design experiments and evaluate findings.

11.34 Gallie, Duncan. *In Search of the New Working Class: Automation and Social Integration Within the Capitalist Enterprise*. New York, Cambridge University Press, 1978. 348 pp.

Deals with the impact of the shift toward automated processes on the degree of social integration of the work force within the enterprise, and the pattern of industrial relations. Also discusses the implications for trade unions.

11.35 Geare, A.J. "Productivity from Scanlon-type Plans." *Academy of Management Review*, Vol. 1, No. 3, July 1976, pp. 99–108.

Views economic motivation as being of major importance in the success of Scanlon-type plans. Criticizes the belief that worker participation in decisionmaking improves productivity.

11.36 Gold, Bela. "Factors Stimulating Progress in Japanese Industries: The Case of Computerization in Steel." *The Quarterly Review of Economics and Business*, Vol. 18, No. 4, Winter 1978, pp. 7–21.

Discusses such major sources of advance as managerial commitment to building Japanese prestige; high ratio of engineers to wage earners; frequent transfer of personnel to different production teams; long-run, process-oriented research programs; and comprehensive planning and centralized control.

11.37 Goldoff, Anna C. "The Perceptions of Participants in a Joint Productivity Program." *Monthly Labor Review*, Vol. 101, No. 7, July 1978, pp. 33–34.

Reporting on a survey of participants in New York City's productivity improvement program, the author finds moderate to strong commitment to this program. Also reports that managers mostly believed they played a primary role, unlike union representatives, who mostly believed they did not.

11.38 Granick, David. *Enterprise Guidance in Eastern Europe: A Comparison of Four Socialist Economies*. Princeton, Princeton University Press, 1975. 505 pp.

Presents a comparative study of variations in enterprise management resulting from different kinds of economic reforms in the German Democratic Republic, Hungary, and Yugoslavia during the second half of the 1960's. Examines the impact of the reforms on managerial operations, and the tendencies toward decentralization they embodied.

11.39 Grinold, Richard C., and Marshall, Kneale T. *Manpower Planning Models*. New York, North Holland Publishing Co., 1977. 267 pp.

The authors show the use of mathematical models to forecast manpower requirements; analyze the impact of proposed changes, as in promotion and retirement rules; and in structuring the manpower information system for better analysis and planning.

11.40 Gruber, William H., and Niles, John S. *The New Management: Line Executive and Staff Professional in the Future Firm*. New York, McGraw-Hill, 1976. 242 pp.

The authors define the new management as a blending of the new areas of computer-based information systems, strategic planning, management science, and organization development, with the older areas of law, accounting, and research and development. They identify the communications gap between older line executives and younger research-based staff professionals as management's most critical problem.

11.41 Gurley, J.G. "Rural Development in China 1949-72, and the Lessons to be Learned from It." *World Development*, Vol. 3, No. 7 & 8, July-August 1975, pp 455–71.

Finds that collectivization raised rural output through better use of labor, and that mechanization of agriculture further raised productivity. Lowering of prices paid by peasants and raising prices they received also promoted rural development.

11.42 Hackman, J. Richard, and others. "A New Strategy for Job Enrichment." *California Management Review*, Vol. 17, No. 4, Summer 1975, pp. 57–71.

The authors examine how to "diagnose" a job before changing it, and the steps to take on the basis of the diagnosis to generate beneficial results.

11.43 Hall, Arden Random. *The Efficiency of Post-Bellum Southern Agriculture*. Doctoral dissertation presented to the University of California, Berkeley, 1975. 247 pp.

Argues that post-Civil War economic stagnation of the South resulted from certain conditions in agriculture, including tenant farming, an inadequate agricultural credit system, slow diffusion of technological innovations, and the poor state of race relations.

11.44 Hannah, Leslie, and Kay, J.A. *Concentration in Modern Industry: Theory, Measurement and the U.K. Experience*. London, Macmillan Press, 1977. 144 pp.

The authors analyze the view that the growth in concentration is due mainly to modern technology, and argue that such growth results in fact mainly from mergers.

11.45 Hansen, B. "Arab Socialism in Egypt." *World Development*, Vol. 3, No. 4, April 1975, pp. 201–11.

Argues that efficiency in the "modern" sector, principally finance and trade, has declined, as it may also have in agriculture. Believes that Egypt's system of agrarian cooperatives is the only exemplary feature of Arab socialism.

11.46 Hansen, Niles M. *Improving Access to Economic Opportunity: Nonmetropolitan Labor Markets in an Urban Society.* Cambridge, Mass., Lippincott, Ballinger, 1976. 193 pp.

Examines the consequences of Federal economic development and manpower policies for nonmetropolitan areas. Argues that people in rural areas of the United States lack adequate access to economic opportunity, and that development of lagging regions requires increased linkages with more dynamic sectors of the economy.

11.47 Hebden, John E., and Shaw, Graham H. *Pathways to Participation.* New York, Wiley, 1977. 267 pp.

Argues that pressures will grow for people to become more involved in decisionmaking at the workplace, and analyzes patterns of participation at various organizational levels. Describes numerous developments indicating heightened participation.

11.48 Heaton, Herbert. *Productivity in Service Organizations: Organizing for People.* New York, McGraw-Hill, 1977. 233 pp.

Examines methods of change which result in improving the productivity of organizations in serving people, and in developing individuals in organizations. Discusses organization models and hierarchies of organization methods.

11.49 Heilbroner, Robert L. *Business Civilization in Decline.* New York, Norton, 1976. 127 pp.

Discusses the future of capitalism and the role of multinational corporations.

11.50 Heller, P.S. "A Model of Public Fiscal Behavior in Developing Countries: Aid, Investment, and Taxation." *American Economic Review*, Vol. 65, No. 3, June 1975, pp. 429–45.

Argues that foreign assistance increases public investment but also leads to reduced tax and borrowing efforts, and increases in public consumption.

11.51 Hershfield, David C. "Barriers to Increased Labor Productivity." *The Conference Board Record*, July 1976, pp. 38–41.

Discusses restrictive work practices as barriers to new technology, more productive existing technology, and the most productive assignment of workers. Also discusses attempts to overcome these barriers.

11.52 Höhmann, Hans-Hermann, and others. *The New Economic Systems of Eastern Europe.* Berkeley, Calif., University of California Press, 1975. 585 pp.

A collection of essays covering reforms made between 1947 and 1951 aimed at adapting East European economies to the Soviet system.

11.53 Isaiah, Frank, ed. *The Japanese Economy in International Perspective.* Baltimore, Johns Hopkins University Press, 1975. 306 pp.

A collection of essays dealing with Japan's industrial policy, distribution of income and wealth, fiscal incentives to export, raw materials policy in the United States and Japan, Japanese foreign direct investment, and international corporate investment in Japan.

11.54 Jones, Dallas, ed. *Horizons of Industrial Productivity.* Ann Arbor, Industrial Development Division, Institute of Science and Technology, The University of Michigan, 1977. 160 pp.

The authors present views on some organizational requirements for improving productivity. They explore labor-management committees to foster productivity gains.

11.55 Jones, H.G. *Planning and Productivity in Sweden.* Totowa, N.J., Rowman and Littlefield, 1976. 212 pp.

Surveys the role of the Labour Market Board, central investment planning, industrial relations and trade unionism, and worker issues and problems in Sweden.

11.56 Jones, Leroy P. *Public Enterprise and Economic Development: The Korean Case.* KDI Studies in Economics. Seoul, Korea Development Institute, 1975. 293 pp.

Develops background for enterprise-level efficiency analysis. Finds that public enterprises represented a "guiding" sector during the period of rapid Korean growth.

11.57 Judson, Arnold S. "New Strategies to Improve Productivity." *Technology Review*, Vol. 78, No. 8, July/August 1976, pp. 61–67.

Discusses reasons for lagging productivity, including management's overdependence on technological improvements and failure to change employee behavior. Recommends close union-management collaboration, better measurement procedures, focus on employee attitudes, and continuity of effort.

11.58 Katzell, Raymond A., and others. *A Guide to Worker Productivity Experiments in the United States, 1971-75.* New York, New York University Press, 1977. 186 pp.

The authors present abstracts of 103 field experiments aimed at understanding and improving worker productivity. They divide the experiments into 14 categories, such as management by objective, job development and promotion, goal setting, and job design.

11.59 Kohr, Leopold. *The Overdeveloped Nations: The Diseconomies of Scale.* New York, Schocken Books, 1978. 184 pp.

Argues that such major economic ills as declining living standards and cyclical disruptions are due to the excessive size of nations. Contends that economics must return to a broader philosophic base so that theoretical emphasis on growth economics gives way to emphasis on structures and harmony of proportions.

11.60 Krigline, Alan G. *Organizational Change for the Purpose of Improving Productivity.* Doctoral dissertation presented to Georgia State University, 1977. 182 pp.

Reviewing the literature, the author develops a composite model of organizational change processes. Surveys 22 organizations concerned with improvement of quality of work, and obtains management perceptions of change processes and the results of changes.

11.61 Kuo, Leslie, T.C. *Agriculture in the People's Republic of China: Structural Changes and Technical Transformation.* New York, Praeger, 1976. 288 pp.

Discusses organization and management of farms, ownership of producer goods, and distribution of income and output. Examines policies regarding innovation, soil conservation, and related matters.

11.62 Lawler, Edward E. "The New Plant Revolution." *Organizational Dynamics,* Vol. 6, No. 3, Winter 1978, pp. 3–12.

Examines corporate changes in employee selection procedures, in the involvement of work force in plant design, and pay systems and structural hierarchy when staffing new plant. Describes effectiveness and diffusion of the new approach.

11.63 Leibenstein, Harvey. "Aspects of the X-Efficiency Theory of the Firm." *The Bell Journal of Economics,* Vol. 6, No. 2, Autumn 1975, pp. 580–606.

Presents an analysis in which the individual, rather than the firm, is the basic decision unit, effort is the basic variable, and costs are determined by interrelated individual effort decisions. Argues that concern for self-interest will probably cause individuals to select effort positions that do not maximize their contribution to a firm's output.

11.64 Leibenstein, Harvey. *Beyond Economic Man: A New Foundation for Microeconomics.* Cambridge, Harvard University Press, 1976. 297 pp.

Argues that economic agents should not be assumed to be simply economically calculating, but that motivations are more complex. Holds that individual behavior in a group partly explains the often observed sluggishness in large bureaucracies.

11.65 Leontief, Wassily W., and Stein, Herbert. *The Economic System in an Age of Discontinuity: Long-Range Planning or Market Reliance?* New York, New York University Press, 1976. 148 pp.

Debating the merits of planning, Leontief urges the development of a detailed statistical matrix to formulate alternative plans, to be adopted democratically. Stein argues the adequacy of current economic performance and of the market mechanism as an effective instrument of resource allocation.

11.66 Levitt, Theodore, "The Industrialization of Service." *Harvard Business Review*, Vol. 54, No. 5, September-October 1976, pp. 63–74.

Discusses modes of industrializing of service by means of technological as well as organizational tools. Cites numerous examples. Argues for the mass production of services to result in high service productivity.

11.67 Levitt, Theodore, "Management and 'Post-Industrial' Society." *The Public Interest*, No. 44, Summer 1976, pp. 69–103.

Deals with productivity in services, and whether it can reach the same levels as in manufacturing. Discusses management's role in raising service productivity. Argues the importance of technology for service productivity.

11.68 Lindblom, Charles E. *Politics and Markets: The World's Political Economic Systems*. New York, Basic Books, 1977. 403 pp.

Argues that the degree to which the market replaces government, and government replaces the market, is basic to distinctions between types of government. Discusses the competence of markets and of authority systems, as well as the variety of market systems. Also discusses the relation between private enterprise and democracy, the communist system, and planning.

11.69 Lobos, Julio Alejandreo. *Technology and Organization Structure: A Comparative Case Study of Automotive and Processing Firms in Brazil*. Doctoral dissertation presented to Cornell University, 1976. 275 pp.

Hypothesizes that the formal pattern of organization will be more strictly enforced in assembly-line than in continuous-process organizations; that impersonal control mechanisms will be more developed in the former than in the latter; and that managerial ideology will be more conservative, non-innovative and less people-oriented. Finds these hypotheses confirmed by his studies.

11.70 Lubin, Roger. "The Little Rock Custodial Make-Buy Study. A Transferable Technology." *Public Productivity Review*, Vol. III, No. 2, Summer/Fall 1978, pp. 61–72.

Discusses the use of engineered work standards, focusing on custodial maintenance. Analyzes results for productivity improvement. Stresses the need for worker participation.

11.71 Maloney, William F. *Productivity Bargaining. A Study in Contract Construction*. Doctoral dissertation submitted to The University of Michigan, 1976. 437 pp.

Assesses productivity in various areas of construction prior to adoption of productivity bargaining. Examines the development and process of productivity bargaining and investigates its impact on productivity and the bargaining relationship.

11.72 Marsh, Robert M., and Mannari, Hiroshi. *Modernization and the Japanese Factory*. Princeton, Princeton University Press, 1976. 437 pp.

The authors deal with organization as the setting for Japan's industrial success. They analyze the paternalism/lifetime-commitment model of the Japanese factory, and present a critique of it. They also discuss the social integration of the employee in the company, performance of Japanese firms, job satisfaction and work value, and other topics.

11.73 Maxwell, N. "Learning from Tachai." *World Development*, Vol. 3, No. 7&8, July-August 1975, pp. 473–95.

Describes practices initiated at the model village of Tachai, their spread, and consequent increases in productivity through such measures as land reclamation and river control.

11.74 McFarland, Dalton E. "Whatever Happened to the Efficiency Movement?" *The Conference Board Record*, Vol. 13, No. 6, June 1976, pp. 50–55.

Traces reasons for the relative decline of efficiency as an organizational goal. Discusses the rise of bureaucracy, and bureaucracy as a means to efficiency. Also discusses the treatment of efficiency in managerial science.

11.75 Melcher, Arlyn J. "Participation: A Critical Review of Research Findings." *Human Resource Management*, Vol. 15, No. 2, Summer 1976, pp. 12–21.

Finds that participation sharply increases acceptance of decisions but affects the attitudes only of those consulted and has little influence on those with an "authoritarian" orientation. Summarizes conditions under which low participation might be acceptable, e.g., where speedy action is necessary or clearly defined goals exist.

11.76 Meller, Patricio. "Efficiency Frontiers for Industrial Establishments of Different Sizes." *Explorations in Economic Research*, Vol. 3, No. 3, Summer 1976, pp. 379–407.

Based on Chilean establishments, the author examines the characteristics of efficient and inefficient firms, finding that 75 percent operate at a level of efficiency 50 percent below that of the most efficient firm.

11.77 Melman, Seymour. "Decision Making and Productivity as Economic Variables. The Present Depression as a Failure of Productivity." *Journal of Economic Issues*, Vol. 10, No. 2, June 1976, pp. 218–40.

Argues that decisionmaking in industrial enterprises has tended to shift from cost-minimizing to cost-maximizing under the impact of expanding military procurement. Also argues that defense spending has undermined the cost-minimizing/mechanization nexus, and therefore has caused productivity improvement to stagnate.

11.78 Milenkovitch, Deborah D. "The Case of Yugoslavia." *American Economic Review*, Vol. 67, No. 1, February 1977, pp. 55–60.

Indicates that by 1970 Yugoslavia's economic reforms were unsuccessful in terms of desired levels of self-management, efficiency, equality, and harmony among various nationalities. Describes reforms of 1970's as being neither market- nor planning-centered.

11.79 Montgomery David. "Workers Control of Machine Production in the 19th Century." *Labor History*, Vol. 17, No. 4, Fall 1976, pp. 485–509.

Examines the functional autonomy of craftsmen; union work rules; and mutual support of diverse trades in rule enforcement. Discusses the impact of scientific management and employers' open-shop drive on these control devices.

11.80 Mueller, Ronald E. "National Economic Growth and Stabilization Policy in the Age of Multinational Corporations: The Challenge of Our Postmarket Economy." In *U.S. Economic Growth from 1976 to 1986: Prospects, Problems, and Patterns*. Vol. 12 - *Economic Growth in the International Context*. Studies Prepared for the Use of the Joint Economic Committee, U.S. Congress, May 23, 1977. Washington, U.S. Government Printing Office. pp. 35–79.

Argues that the spread of multinational corporations represents a structural transformation in the economy, and that conventional fiscal and stabilization policies are impotent to deal with the results.

11.81 Mundel, Marvin. *Motion and Time Study: Improving Productivity*. 5th edition. Englewood Cliffs, N.J., Prentice-Hall, 1978. 750 pp.

The author presents detailed discussions of techniques and a wide array of pertinent examples ranging into fields not traditionally covered by the subject, such as work standards for lawyers, pharmacists, and sales clerks.

11.82 Murrell, Peter. *Long-Run Economic Planning and Optimal Growth*. Doctoral dissertation presented to the University of Pennsylvania, 1977. 346 pp.

Develops a theory of economic planning in terms of coordination of economic policy tools. Argues that optimal growth plans are relevant only to perfectly functioning socialist marketing economies. Examines how consumer preferences can be embodied in a plan.

11.83 Musgrave, Alvin William. *An Inquiry into the State of Managerial Innovation in the United States Shipbuilding Industry*. Doctoral dissertation presented to The George Washington University, 1975. 289 pp.

Based on a survey, the author finds that management is primarily concerned with current problems and gives no long-term strategic treatment to innovation.

11.84 Noble, David F. *America by Design: Science, Technology, and the Rise of Corporate Capitalism*. New York, Knopf, 1977. 384 pp.

Investigates the relation between corporate enterprise and scientific technology, focusing upon the institutional evolution of engineering. Discusses the impact of industry upon education, scientific and industrial standardization, patent law reform and monoply, and the relation of corporate management and engineers.

11.85 Odagiri, Hiroyuki. *A Theory of Growth in a Corporate Economy.* Doctoral dissertation presented to Northwestern University, 1977. 221 pp.

Examines managerial decisionmaking and optimization behavior of managers. Investigates savings-investment relations in an all-corporate economy. Also argues the case for his theory, partly on the basis of Japanese experience.

11.86 O'Connor, C.W., and Hammonds, T.M. "Measurement of the Economic Efficiency of Central Fabrication Versus Carcass Meat Handling Systems." *American Journal of Agricultural Economics,* Vol. 57, No. 4, November 1975, pp. 665–75.

The authors suggest that central fabrication is more efficient for some independent retail meat departments. They favor a new profit model over the more traditional linear programming technique for evaluating relative efficiency.

11.87 Ofer, G. "Industrial Structure, Urbanization, and the Growth Strategy of Socialist Countries." *Quarterly Journal of Economics,* Vol. 90, No. 2, May 1976, pp. 219–44.

Argues that socialist countries economize on urbanization by "internalizing" the costs of infrastructure. Also contends that they industrialize by forcing up capital-labor ratios in comparison with market economies.

11.88 Offe, Claus. *Industry and Inequality. The Achievement Principle in Work and Social Status.* New York, St. Martin's Press, 1977. 158 pp.

Critically analyzes how inequality arises and how it is legitimized. Examines whether, and how, achievement in industrial organizations is related to reward. Argues that recruitment and promotion procedures do not so much reward technical performance as they do acceptance of the organization's power relationships.

11.89 Olson, Mancur. "The Political Economy of Comparative Economic Growth Rates." In *U.S. Economic Growth from 1976 to 1986: Prospects, Problems, and Patterns.* Vol. 2 - *The Factors and Processes Shaping Long-Run Economic Growth.* Studies Prepared for the Use of the Joint Economic Committee, U.S. Congress, November 10, 1976. Washington, U.S. Government Printing Office, pp. 25–40.

Discusses the sources and causes of growth in the context of organized interest groups and their impact on growth. Argues that such groups tend toward monopoly, and that growth is most rapid when they are few.

11.90 Patrick, Hugh, ed. *Japanese Industrialization and Its Social Consequences.* Berkeley, University of California Press, 1976. 505 pp.

A compilation of conference papers dealing with economic and sociological aspects of the Japanese work force, and such consequences of industrialization as demographic transitions, income inequality, and poverty.

11.91 Perkins, Edwin J., ed. *Men and Organizations: The American Economy in the Twentieth Century.* New York, Putnam, 1977. 201 pp.

A collection of papers interpreting economic and historical development in the United States in terms of changing organizational structures. Subjects include the vertical integration of manufacturing; the structure of industry; the development of conglomerate firms; and the emergence of mass-production unionism.

11.92 PoKempner, Stanley J. *Management Science in Business.* New York, The Conference Board, 1977. 91 pp.

Presents a survey of companies that rely heavily on mathematical techniques in devising managerial systems, employing a special staff to do so. Examines pertinent projects and the position of the management scientist in the organization.

11.93 Pomfret, Richard W.T. *Trade Policies and Industrialization in a Small Country: The Case of Israel.* Kieler Studien No. 141. Tubingen, Germany, J.C.B. Mohr (Paul Siebeck), 1976. 204 pp.

Assesses the impact of trade policy on resource allocation and growth, income distribution, employment, and the relations between trade, technical efficiency, and industrial organization. Notes that despite some allocative inefficiency generated by the high level of protection, the Israeli economy sustained a high rate of growth.

11.94 Restrepo, Carlos Emilio. *The Transfer of Management Technology to a Less Developed Country: A Case Study of a Border Industrialization Program in Mexico.* Doctoral dissertation presented to the University of Nebraska, 1975. 248 pp.

Evaluates the extent to which native managers employed by American firms apply new managerial technologies. Finds it to be limited. Also finds Mexican managers employed by Mexican firms to enjoy much wider authority than those employed by American firms. Also finds, however, that local educational institutions are deficient.

11.95 Rhodes, Susan R. *The Relationship between Worker Ownership and Control of Organizations and Work Attitudes and Behavior.* Doctoral dissertation presented to the University of Oregon, 1978, 168 pp.

Addesses the relation between worker ownership and control of organizations, and worker attitudes toward the organization. Finds that participation in decisionmaking and perceptions of performance rewards and pay equity are greater in cooperative than in conventional organizations, and that cooperative members are more committed to their organization than members of conventional firms.

11.96 Riemer, Jeffrey W. " 'Hard Hats' Mistakes at Work: The Social Organization of Error in Building Construction Work." *Social Problems,* Vol. 23, No. 3, February 1976, pp. 255–67.

Deals with four varieties of mistakes and attributes them to the transitional nature of the work setting, the specialized nature of the work performed, and the "negotiated" process by which the work gets done. Also discusses the "management" of the mistakes.

11.97 Rosenberg, Jean Gibson. *Agricultural Productivity in the Philippines in the American Colonial Period.* Doctoral dissertation presented to Cornell University, 1976. 169 pp.

Examines trends in land yields, institutions that affected the yields, and whether changes in the institutions caused yield improvements.

11.98 Roy, Robert H. *The Cultures of Management.* Baltimore, Johns Hopkins University Press, 1977. 431 pp.

Deals with the impact of technological development on management. Also considers operations research and computer systems analysis.

11.99 Ryavec, Karl W. *Implementation of Soviet Economic Reforms: Political, Organizational, and Social Processes.* New York and London, Praeger, 1975. 360 pp.

Examines aspects of industrial management structure, such as the role of ministries in supervising managers, the role of nonministerial agencies, labor, interenterprise relations, and the effect of reforms on workers.

11.100 Shaeffer, Ruth G, and others. *Monitoring the Human Resource System.* New York, The Conference Board, 1977. 41 pp.

An analysis, together with comments by conference panelists, of the systems and measurements required to operate corporate personnel systems. The authors discuss staffing patterns, human resources flows, and the development of human resources.

11.101 Sichel, Werner, and Gies, Thomas G., eds. *Public Utility Regulation: Change and Scope.* Lexington, Mass., Heath, 1975, 103 pp.

A collection of papers arguing that regulation fails to encourage innovation and invention, that competition is not necessarily related to good performance, and that regulation should address efficiency and effectiveness rather than reasonable rates. Technological improvement and pollution control are also discussed.

11.102 Skolka, Jiri V. "The Substitution of Self Service Activities for Marketing Services." *Review of Income and Wealth,* Series 22, No. 4, December 1976, pp. 297–304.

Argues that self service expands with the rising expense and associated low productivity of marketed private services. Examines self service in terms of consumers' time, economics, and impact on private consumption, and notes its impact on the allocation of time between "market" and "leisure" activities.

11.103 Streeten, P. "Policies towards Multinationals." *World Development,* Vol. 3, No. 6, June 1975, pp. 393–97.

Suggests that international mobility of scarce factors such as technological know-how, management, and marketing may yield uneven division of gains when combined with no international mobility of unskilled and semiskilled labor. Advocates host country bargaining over sharing in the rents and quasi-rents of the scarce factors.

11.104 Suojanen, Waino, W., and others. *Perspectives on Job Enrichment and Productivity.* Atlanta, Georgia State University, School of Business Administration, 1975. 279 pp.

A collection of essays dealing with the relation of job enrichment to management theory, organizational change, and job satisfaction. Case studies are presented.

11.105 Swann, M.J. "On the Theory of Optimal Planning in the Soviet Union." *Australian Economic Papers,* Vol. 14, No. 24, June 1975, pp. 41–56.

Considers the choice of mathematical techniques available to optimal planners such as linear programming and input-output. Outlines the relation of the price mechanism and the incentive system to the theory of optimal planning.

11.106 Taylor, Joseph K. *Hospitals: Organizational Variables, Productivity and Efficiency.* Doctoral dissertation presented to Georgia State University, 1978. 201 pp.

Determines the relations indicated from a survey of eight large departments in selected hospitals. Derives productivity and efficiency measures from American Hospital Association data definitions. Examines relationship between management style and other variables.

11.107 Thomas, John S. "Demand Analysis: A Powerful Productivity Improvement Technique." *Public Productivity Review,* Vol. 3, No. 1, Spring 1978, pp. 32–43.

Discusses ways of aggregative planning, identifying demand patterns and appropriate deploying of resources.

11.108 United Nations, Center on Transnational Corporations. *Transnational Corporations in World Development. A Re-examination.* New York, United Nations, 1978. 343 pp.

Discusses major trends in host and home country policies. Analyzes patterns and trends in activities, and evolving relationships. Also describes new directions, such as in strengthening the capacity to deal with transnational corporations, and alternative forms of cooperation.

11.109 U.S. General Accounting Office. Comptroller General of the United States. *The Federal Role in Improving Productivity—Is the National Center for Productivity and Quality of Working Life the Proper Mechanism?* Washington, May 23, 1978. 7 pp.

Finds that inadequate resources and lack of authority stymied the Center's efforts. Also holds that it lacked an overall plan to achieve objectives. Urges greater Federal involvement to improve productivity.

11.110 U.S. National Center for Productivity and Quality of Working Life. *The Future of Productivity.* Report of a National Conference. Washington, U.S. Government Printing Office, Winter 1977. 139 pp.

The authors discuss advances in managerial techniques and business organization, and some promising technologies in agriculture. They credit enhanced knowledge and other unmeasured factors for most of the productivity growth for Japan. They also consider Western Europe and Britain.

11.111 Vanek, Jaroslav. *The Labor-Managed Economy.* Ithaca, Cornell University Press, 1977. 287 pp.

Appraises the theoretical implications of decentralization under worker management. Discusses the Yugoslav economy in terms of the theory. Also deals with investment and funding, and concludes with a chapter on the implications of self-management.

11.112 Voll, Sarah P. *Technological Transfer in Large-Scale Agricultural Projects: The Role of Private Enterprise.* Doctoral dissertation presented to the University of New Hampshire, 1977. 344 pp.

Examining a number of such projects, the author argues for high value and industrial crops; careful feasibility studies and pilot projects; close proximity of the project to a suitable labor force; training of host nationals; appropriate incentives; and the project's being part of a regional development plan.

11.113 Wecksler, A.N. *Recent Initiatives in Labor-Management Cooperation.* Vol. I. National Center for Productivity and Quality of Working Life. Washington, U.S. Government Printing Office, 1976. 62 pp.

Discusses examples of functioning labor-management committees and provides suggestions for similar efforts to sustain productivity growth and improve the quality of working life.

11.114 Wecksler, A.N. *Recent Initiatives in Labor-Management Cooperation.* Vol. II. National Center for Productivity and Quality of Working Life, Washington, U.S. Government Printing Office, Spring 1978. 90 pp.

Discusses uniqueness of firms' programs, resulting from differences in personnel, products, and problems. Case studies emphasize productivity gains and worker satisfaction.

11.115 Weinberg, Edgar. "Labor-Management Cooperation: A Report on Recent Initiatives." *Monthly Labor Review,* Vol. 99, No. 4, April 1976, pp. 13–22.

Discusses efforts to improve productivity and work quality in the steel, automotive, railroad, and retail food industries. Also deals with communitywide efforts.

11.116 Weinstein, Paul A., ed. *Challenges in Public Sector Labor Relations.* College Park, Md., Public Sector Labor Relations Conference Board, 1975. 121 pp.

The authors discuss difficulties in measuring productivity, workers' concern with job content, and problems of institutional change.

11.117 Wild, Ray. *Work Organization: A Study of Manual Work and Mass Production.* New York, John Wiley, 1975. 226 pp.

Discusses mass production systems in industries producing complex items. Also discusses the concept of functional work groups. Presents case studies.

11.118 Wilson, John Lewis. *The Theory and Practice of Small Farmer Development.* Doctoral dissertation presented to The American University, 1977. 208 pp.

Examines programs that promote rural development. Distinguishes technological and "problem-solving" approaches, finding them to be two options impinging on organization, community leadership development, and extension work. Also finds underlying differences in concept of people and their capabilities. Examines implications for the dualistic form of economic development.

11.119 Witte, John F. *Democracy, Authority, and Alienation in Work: A Case Study in Workers' Participation in an American Corporation.* Doctoral dissertation presented to Yale University, 1978. 397 pp.

Investigates two basic forms of participation: Joint worker-management policymaking councils and committees, and operational-level experiments with autonomous and semi-autonomous work groups. Tests aspects of organizational and democratic theory including the success of democratic structures in improving productivity. Finds severe limitations stemming from management's meritocratic premises.

11.120 Zager, Robert. "The Problem of Job Obsolescence: Working It Out at River Works." *Monthly Labor Review,* Vol. 101, No. 7, July 1978, pp. 29–32.

Reporting on an experiment, the author discusses cooperation between management and labor in technological change, job security, and attrition. Finds workers accommodate to change if they perceive that it benefits them.

11.121 Zager, Robert. *Productivity and Job Security: Attrition—Benefits and Problems.* National Center for Productivity and Quality of Working Life. Washington, U.S. Government Printing Office, Fall 1977. 116 pp.

Discusses the effectiveness of attrition clauses in collective bargaining contracts in three firms.

Energy, economies of scale, and other factors

12.1 American Rural Small-Scale Industry Delegation. *Rural Small-Scale Industry in the Peo-*

ple's Republic of China. Berkeley, University of California Press, 1977. 296 pp.

Deals with worker incentives, the economies of rural small-scale industries, machinery production, chemical fertilizer technology, the relation of the administrative system to small-scale industries, and the impact of small-scale industry on Chinese society.

12.2 Anderson, Patricia Mottram. *Capacity Utilization and Investment in Manufacturing: A Theoretical and Empirical Explanation*. Doctoral dissertation presented to the University of Massachusetts, 1977. 279 pp.

Investigates capacity utilization in several hundred industries by a stabilization examination of market position, product characteristics, production, productivity, and other variables. Explains investment by examining sales change, profitability, and capital stock variables.

12.3 Berndt, E.R. "Reconciling Alternative Estimates of the Elasticity of Substitution." *Review of Economics and Statistics*, Vol. 58, No. 1, February 1976, pp. 59–68.

Refers to the substantial disagreement over the value of the elasticity of substitution between capital and labor in U.S. manufacturing. Notes that usually time-series studies report smaller estimates than cross-sectional analyses.

12.4 Bhatia, Rattan J., and Khatkhate, Deena R. "Financial Intermediation, Savings Mobilization, and Entrepreneurial Development: The African Experience." *International Monetary Fund Staff Papers*, Vol. 22, No. 1, March 1975, pp. 132–58.

The authors try to determine whether financial intermediation is a condition for economic growth. They find no conclusive relationship but suggest that intermediation could become more pronounced at advanced levels of the saving-investment processes.

12.5 Breimyer, H.F. "Agriculture's Three Economies in a Changing Resource Environment." *American Journal of Agricultural Economics*, Vol. 60, No. 1, February 1978, pp. 37–47.

Points out that many years of abundant industrial raw materials tended to favor industrialization of U.S. agriculture. Argues that gradual depletion and rising prices have slowed the pace of industrialization, with differences evident for crops, livestock, and marketing.

12.6 Caswell, J.W. "Economic Efficiency in Pension Plan Administration: A Study of the Construction Industry." *Journal of Risk and Insurance*, Vol. 43, No. 2, June 1976, pp. 257–73.

Investigates the economies of scale in collectively bargained, multiemployer pension plans in the construction industry. Relates administrative expenses to active participants and investment activity. Finds economies of scale in long-run average administrative expenses.

12.7 Caves, R.E., and others. "Scale Economies in Statistical Analyses of Market Power." *Review of Economics and Statistics*, Vol. 57, No. 2, May 1975, pp. 133–40.

The authors develop a statistical proxy based on census data to designate industries in which disadvantages of small scale are great, and minimum efficient scale therefore is important. They find that multivariate analyses of market power in U.K. and U.S. industries improve the statistical significance of the scale-economies measure.

12.8 Center for the Study of American Business, Washington University. *U.S. Productive Capacity: Estimating the Utilization Gap*. Working Paper No. 23. St. Louis, 1977. 166 pp.

The authors comment on current and projected capacity and utilization. They discuss potential output concepts, the impact of energy costs on output, and other topics.

12.9 Chatterjee, P.K. "Economics of Farm Size (A Study with References to West Bengal)." *Economic Affairs*, Vol. 21, No. 3, March 1976, pp. 115–20.

Finds that, by various measures of efficiency—including intensity of cultivation, profitability, and cost of production per unit of output—small farms are as efficient as large farms.

12.10 Christensen, L.R., and Greene, W.H. "Economies of Scale in U.S. Electric Power Generation." *Journal of Political Economy*, Part 1, Vol. 84, No. 4, August 1976, pp. 655–76.

Analyzing data for 1955 and 1970, the authors find that, while in 1955 there were significant scale economies available to nearly all firms, by 1970 the bulk of U.S. electricity generation was by firms operating in the essentially flat area of the average cost curve.

12.11 Darmstadter, Joel, and others. *How Industrial Societies Use Energy: A Comparative Analysis*. Baltimore, Johns Hopkins University Press, 1977. 282 pp.

The authors use sectoral analysis and input-output techniques to analyze variations in energy consumption among nine highly industrialized nations. They interpret the contributions of economic structure and characteristics of energy utilization to intercountry variations in energy and output. They find the greatest intercountry differences in the transportation sector.

12.12 Diffenbach, John Edward. *Evolution of New Energy Technologies: Factors Affecting Progress Toward Commercialization*. Doctoral dissertation presented to Harvard University, 1976. 335 pp.

Identifies causal factors and determines their relative importance. Explores four energy technologies, finding such factors as technical readiness, program management and political support, as well as economic factors such as utility, of importance to the progress of energy technology.

12.13 Dickson, Vaughan A. *Scale Efficiencies in Canadian Manufacturing*. Doctoral dissertation presented to The University of Western Ontario, 1977. Pp. not indicated.

Develops a model isolating those elements of market structure that influence the degree of scale efficiency in an industry. Also examines relevance of location theory. Finds that such variables as market size, transportation costs, market share, and tariff protection affect scale efficiencies.

12.14 Feeny, David H. *Technical and Institutional Change in Thai Agriculture, 1880-1940*. Doctoral dissertation presented to The University of Wisconsin, 1976. 333 pp.

Investigates why Thai living standards failed to rise despite strong growth of rice exports, accompanied by displacement of native handicraft by imported manufactures. Finds failure of agricultural productivity to improve due to lack of governmental efforts. Examines reasons for such lack.

12.15 Forest, Lawrence R., Jr. *Federal Reserve Measures of Capacity and Capacity Utilization*. Washington, Board of Governors of the Federal Reserve System, February 1978. 40 pp.

Explains the importance of utilization rates, their derivation, and reasons for revisions. Provides historical data and bibliography.

12.16 Geehan, R. "Returns to Scale in the Life Insurance Industry." *Bell Journal of Economics*, Vol. 8, No. 2, Autumn 1977, pp. 497–514.

Estimates the long-run average cost curve for the Canadian life insurance industry with an output measure consisting of a weighted sum of activities. Finds statistically significant returns to scale.

12.17 Green, A., and Urquhart, M.C. "Factor and Commodity Flows in the International Economy of 1870-1914: A Multi-Country View." *Journal of Economic History*, Vol. 36, March 1976, pp. 217–52.

The authors present data which indicate that the international movement of people, capital, and goods was extremely fluid and took place under highly diverse conditions of population change and economic growth.

12.18 Green, Maurice B. *Eating Oil: Energy Use in Food Production*. Boulder, Colo. Westview Press, 1978. 205 pp.

Argues that the food production and processing systems in the United States and the United Kingdom consume large amounts of fossil fuel energy. Discusses ways of saving energy.

12.19 Greene, William H. *The Structure of Production in the U.S. Electric Power Industry*. Doctoral dissertation submitted to The University of Wisconsin, 1976. 287 pp.

Discusses economies of scale in power generation, effect of market structures on costs of generation, and marginal costs of service to different customers. Also discusses mergers and power pools as means to achieve scale economies.

12.20 Hajra, S., and Kumar, Ashok. *Production Function in Indian Industry.* New Delhi, Economic and Scientific Research Foundation, 1977. 321 pp.

The authors discuss measurement problems, patterns of utilization of capital and labor, relative factor prices, efficiency of capital and labor, and cost-price relationships.

12.21 Hayes, Denis. *Rays of Hope: The Transition to a Post-Petroleum World.* New York, Norton for Worldwatch Institute, 1977. 240 pp.

Examines globally the actions thought to be needed to assure energy conservation and the development of alternative sources of energy. Discusses the efficient use of existing energy. Concludes that for many years the world's major opportunities will be in energy conservation.

12.22 Hazledine, T., and Watts, I. "Short-Term Production Functions and Economic Measures of Capacity for U.K. Manufacturing Industries." *Oxford Bulletin of Economics and Statistics,* Vol. 39, No. 4, November 1977, pp. 273–89.

The authors hypothesize that labor productivity, in the short term, first rises towards, then falls away from, peak levels as output and employment are increased. They find support for the hypothesis from data on 14 U.K. manufacturing industries.

12.23 Hayami, Y., and Kikuchi, M. "Investment Inducements to Public Infrastructure: Irrigation in the Philippines." *Review of Economics and Statistics,* Vol. 60, No. 1, February 1978, pp. 70–77.

The authors find that government investments are guided mainly by the criteria of social rates of return. They also find that government tends to be overly responsive to short-run economic fluctuations, causing long-run inefficiencies in social resource allocations.

12.24 Henry, E.W. "A Simple Approach to Production Functions via Factor Costs." *Economic and Social Review,* Vol. 6, No. 4, July 1975, pp. 487–97.

Explores some common ground between input-output accounting and Cobb-Douglas production functions. Considers the problem of expressing value added as a function of labor, capital stock, and time.

12.25 Holloman, Herbert J., and Grenon, Michel. *Energy Research and Development.* A Report to the Energy Policy Project of the Ford Foundation. Cambridge, Mass., Lippincott, Ballinger, 1975. 264 pp.

The authors stress reliance on the market system for R&D decisions, with governmental intervention where the market fails to meet certain social needs.

12.26 Hudson, Edward A., and Jorgenson, Dale W. "Energy Policy and U.S. Economic Growth." *American Economic Review,* Vol. 68, No. 2, May 1978, pp. 118–23.

The authors quantify the impact of alternative energy policies on future energy prices, energy utilization, and U.S. economic growth and structure.

12.27 Huettner, D.A., and Landon, J.H. "Electric Utilities: Scale Economies and Diseconomies." *Southern Economic Journal,* Vol. 44, No. 4, April 1978, pp. 883–912.

The authors find diseconomies of scale for firms beyond a moderate size for several operating cost categories and for fixed costs, and little support for holding-company efficiencies. They discuss performance evaluations by utility commissions and the natural monopoly status and nontraditional cost functions of electric utilities.

12.28 Hughes, G.A. "Investment and Trade for a Developing Economy with Economies of Scale in Industry." *Review of Economic Studies,* Vol. 43, No. 2, June 1976, pp. 237–48.

Examines the interindustry ramifications of planning when input coefficients are dependent on the scale of production. Discusses investment allocation and the transfer of labor from the agricultural sector.

12.29 Ip, P.C., and Stahl, C.W. "Systems of Land Tenure, Allocative Efficiency, and Economic Development." *American Journal of Agricultural Economics,* Vol. 60, No. 1, February 1978, pp. 19–28.

The authors consider comparative efficiency of resource allocation under sharecropping, fixed rental, wage cultivation, and owner cultivation. They conclude that land redistribution to peasants and substitution of owner-cultivators for share tenants tend to improve agricultural production efficiency and resource allocation between the farm and other sectors.

12.30 Jones, Arthur. *The Decline of Capital.* New York, Crowell, 1976. 202 pp.

Argues that the process of constant growth in the United States has ended, and a new era of permanent recession has begun. Finds an absence of such necessary preconditions for constant growth as cheap energy, cheap raw materials, cheap venture capital, low rates of inflation, and low interest rates.

12.31 Johnston, Bruce F., and Kilby, Peter. *Agriculture and Structural Transformation: Economic Strategies in Late-Developing Countries.* New York, Oxford University Press, 1975, 474 pp.

The authors survey Mexico, Taiwan, and the Soviet Union. They discuss the relation between industries making farm equipment and fertilizer, and increases in farm output. They argue for agricultural experiment stations.

12.32 Klepper, R., and others. "Economic Performance and Energy Intensiveness on Organic and Conventional Farms in the Corn Belt: A Preliminary Comparison." *American Journal of Agricultural Economics,* Vol. 59, No. 1, February 1977, pp. 1–12.

The authors discuss energy and environmental problems in U.S. agriculture. They cite large-scale, mechanized organic farms that use little or no inorganic fertilizers or chemical pesticides as a possible alternative.

12.33 de Leeuw, Frank, and Grimm, Bruce T. "The Growth of Materials Capacity and the Outlook for its Utilization." *Survey of Current Business,* Vol. 58, No. 9, September 1958, pp. 48–56.

The authors discuss the theoretical framework for the estimates, and present results for 1953-71. They deal with capacity growth since 1971, and offer projections to 1981.

12.34 Libicki, Martin C. *Industrial Capacity and Planning: The 1973-74 Capacity Shortfall in Manufactured Materials.* Doctoral dissertation presented to the University of California, Berkeley, 1978. 534 pp.

Argues that the 1970 recession, and relatively weak profits during the 1971 trough, discouraged expansion and brought about the undercapacity that marked the subsequent business cycle peak. Also holds that environmental controls were not important in preventing expansion of capacity.

12.35 Malcomson, J.M. "Capacity Utilization, the User Cost of Capital and the Cost of Adjustment." *International Economic Review,* Vol. 16, No. 2, June 1975, pp. 352–61.

Discusses rates of utilization of equipment in U.S. metal working industries, and the extent to which the standard theories of capacity utilization can explain them.

12.36 McConnaughey, John Sewell. *Production Functions in Contract Construction for the United States, 1972.* Doctoral dissertation presented to Michigan State University, 1976. 133 pp.

Based on capital input data from the 1972 Census of Construction Industries, the author estimates production functions. Determines elasticities of substitution and returns to scale. Finds great diversity in skill composition, construction projects undertaken, degree of unionization, and other factors.

12.37 Miller, Edward M. "The Extent of Economies of Scale: the Effects of Firm Size on Labor Productivity and Wage Rates." *Southern Economic Journal,* Vol. 44, No. 3, January 1978, pp. 470–87.

Examining 450 industries at the 4-digit SIC level, the author finds that the largest firms in most industries have higher labor productivity than the rest of their industry.

12.38 Moriak, Theo F. "Implications of Energy and Environment upon Growth in the Food and Fiber Sector." *American Journal of Agricultural Economics,* Vol. 57, No. 5, December 1975, pp. 819–22.

Presents estimates of the impact on costs and output per unit of input of environmental constraints and energy-related cost increases. Finds that annual cost increases for energy related inputs for major crops considerably exceed those due to environmental constraints.

Expects that cutbacks in the use of fertilizer, irrigation, and pesticides will contribute to falling yields.

12.39 Mullineaux, D.J. "Economies of Scale and Organizational Efficiency in Banking: A Profit Function Approach." *Journal of Finance*, Vol. 33, No. 1, March 1978, pp. 259–80.

Applies a theory of the profit function to characterize the commercial-bank production function. Argues that there are increasing returns to scale in banking.

12.40 Murphy, Lawrence, and others. *Perspectives on the Canadian Economy: An Analysis of Cyclical Instability and Structural Change*. Ottawa, The Conference Board in Canada, 1977. 100 pp.

The authors explore the reasons for the cyclical volatility of the Canadian economy during the seventies, and investigate structural changes that may underlie lagging growth and productivity.

12.41 Myers, John G. "The New Realities in Productivity and Growth: Energy and Pollution." *Business Economics*, Vol. 12, No. 1, January 1977, pp. 53–57.

Links the age of capital equipment to pollution and to labor productivity, noting the dependence on capital investment to alleviate the pollution problem and diminish energy needs.

12.42 Nayyar, D. "Transnational Corporations and Manufactured Exports from Poor Countries." *Economic Journal*, Vol. 88, No. 349, March 1978, pp. 59–84.

Shows that the share of transnational corporations in manufactured exports from developing nations is smaller than widely believed. Argues that a strategy of development placing reliance on foreign capital to promote manufactured exports is not always in the interest of poor countries.

12.43 Nguyen, D.T. "The Problems of Peak Loads and Inventories." *Bell Journal of Economics*, Vol. 7, No. 1, Spring 1975, pp. 242–48.

Analyzes the utilization of storage capacity and the associated optimal prices. Argues that storage permits the substitution of off-peak production and/or sales for peak production and/or sales and the fuller use of plants in the off-peak periods.

12.44 Panzar, J.C., and Willig, R.D. "Economies of Scale in Multi-Output Production." *Quarterly Journal of Economics*, Vol. 91, No. 3, August 1977, pp. 481–493.

The authors define a measure of the degree of scale economies, indicating that it can be calculated from the input and output elasticities of the production transformation function.

12.45 Prybyla, Jan S. *The Chinese Economy: Problems and Policies*. Columbia, University of South Carolina Press, 1978. 258 pp.

Discusses trends in population, industry, finance and banking, and other sectors. Analyzes prospects.

12.46 Paddock, Richard D., and Forest, Lawrence R. "New Estimates of Capacity Utilization: Manufacturing and Materials." *Federal Reserve Bulletin*, Vol. 62, No. 10, November 1976, pp. 892–905.

The authors present statistical findings, provide tables of historical data, and compare their own with other estimates.

12.47 Ramachandran, Rama Varma. *Long-Run Production Function and Endogenous Technical Progress—A Neoclassical Approach*. Doctoral dissertation presented to Brown University, 1975. 113 pp.

Inquires how a firm's production function is influenced by its innovative activities so that the production function is uniquely determined at a point in time. Also seeks to determine what incentive a firm has to undertake research at various levels.

12.48 Roskamp, K.W. "A Generalized Production Function for West German Industries." *Weltwirtschaftliches Archiv*, Vol. 112, No. 4, 1976, pp. 749–53.

Elucidates labor productivity in terms of the real wage rate and the capital-labor ratio. Derives a generalized production function from empirical findings.

12.49 Ruist, E., and Söderström, H.T. "Measuring Capacity Utilization and Excess Demand." *European Economic Review*, Vol. 6, No. 4, October 1975, pp. 369–86.

The authors investigate the usefulness of qualitative data on capacity utilization in approximating various macroeconomic variables not covered by direct statistical measurement.

12.50 Sato, Kazuo. *Production Functions and Aggregation.* New York, American Elsevier, 1975. 313 pp.

Examines the relation between micro- and macro-production functions in a competitive industry. Presents a solution to the problem of aggregation of production functions with heterogenous capital. Utilizes data from selected industries in Japan, Norway, and the United States.

12.51 Schaafsma, J. "On Estimating the Time Structure of Capital-Labor Substitution in the Manufacturing Sector: A Model Applied to 1949-72 Canadian Data." *Southern Economic Journal,* Vol. 44, No. 4, April 1978, pp. 740–51.

Finds that it takes 8 years for the capital-labor ratio to adjust completely to a change in the factor-price ratio. Also finds that cyclical fluctuations in output cause cyclical fluctuations in the observed capital-labor ratio.

12.52 Schoen, Richard, and others. *New Energy Technologies for Buildings: Institutional Problems and Solutions.* A Report to the Energy Policy Project of the Ford Foundation. Edited by Jane Stein. Cambridge, Mass., Lippincott, Ballinger, 1975. 217 pp.

The authors discuss ways of applying newly developed energy-conserving technologies. They deal in particular with the concepts of solar energy and on-site electricity production for each building.

12.53 Smil, V. "Intermediate Energy Technology in China." *World Development,* Vol. 4, No. 10/11, October-November 1976, pp. 929–37.

Discusses small mines and hydrogenerating stations, noting that the former extract one-third of China's coal, and the latter one-third of her electricity.

12.54 Smith, R.P. "Military Expenditure and Capitalism." *Cambridge Journal of Economics,* Vol. 1, No. 1, March 1977, pp. 61–76.

Analyzes the role of military expenditure in advanced capitalist countries since the Second World War. Finds by cross-section analysis that high military expenditures are associated with lower investment and lower growth.

12.55 Sorkin, Alan L. *Health Economics in Developing Countries.* Lexington, Mass., Heath, 1976. 200 pp.

Deals with nutrition, the impact of health on economic development, population growth, expenditure and financing of health services, health centers and hospitals, and health personnel. Presents some findings indicating increases in output from improvements in the health and life expectancy of the work force.

12.56 Spielmann, Heinz, and Weeks, Eldon E. "Inventory and Critique of Estimates of U.S. Agricultural Capacity." *American Journal of Agricultural Economics,* Vol. 57, No. 5, December 1975, pp. 922–28.

The authors note some obstacles and methodological issues in estimating agricultural capacity, assuming that estimates must be consistent with those for other economic sectors and in accord with estimates of productivity and efficiency. They recommend survey methods, and the production possibility function.

12.57 Steindl, Josef. *Maturity and Stagnation in American Capitalism.* New York, Monthly Review Press, 1976. 248 pp.

Offers a theoretical and empirical analysis of the Great Depression, in terms of the theory of imperfect competition. Relates capacity utilization to investment. Presents a study of capital accumulation in the United States for 1869-1939.

12.58 Sullivan, Sherman R. *Implications of Production Functions: Yugoslav Economic Growth, 1952-1974.* Doctoral dissertation presented to New York University, 1977. 108 pp.

Notes Yugoslavia's growing instability and the emigration following strong economic growth in 1952-61. Explores the reasons. Believes the output slowdown to have been attributable to factor substitutions rather than structural changes.

12.59 Van Tassel, Alfred J., ed. *The Environmental Price of Energy.* Lexington, Mass., Heath, 1975, 326 pp.

The authors discuss the opportunities for saving energy developed from waste heat, the byproducts of stack gases of electric power plants, the desulfurization of fuel oils, and the byproducts of social waste. They also examine the possibilities of enlarging the energy supply by exploiting new sources of energy.

12.60 Veach, Thomas Long, II, and Schipper Lee. "Resource and Energy Substitution." In *U.S. Economic Growth from 1976 to 1986: Prospects, Problems, and Patterns.* Vol. 4 - *Resources and Energy.* Studies Prepared for the Use of the Joint Economic Committee, U.S. Congress, November 16, 1976. Washington, U.S. Government Printing Office, pp. 94–121.

The authors discuss substitution among energy and materials uses, as well as the substitutability of energy and employment in industry. They also examine the consumer's role.

12.61 United Nations, Economic Commission for Europe. *Structure and Change in European Industry.* New York, 1977. 289 pp.

Examines the relation of industrial structure and growth, drawing national comparisons. Investigates factor intensities, including relative capital intensity by industry branch and labor skills as factors of production. Also examines differences in the growth of productivity, and their relation to structural change and prices.

12.62 U.S. General Accounting Office. *Followup on Use of Numerically Controlled Equipment to Improve Defense Plant Productivity.* Report. Washington, Jan. 17, 1979. 63 pp.

Discusses determinants of plant capacity and efficiency, and the status of numerically controlled equipment operations. Criticizes inadequate managerial effort to improve use of such equipment. Offers recommendations.

12.63 Weiss, F., and Wolter, F. "Machinery in the United States, Sweden, and Germany—An Assessment of Changes in Comparative Advantage." *Weltwirtschaftliches Archiv,* Vol. 111, No. 2, 1975, pp. 282–309.

The authors examine relative factor intensities, scale economies, and national characteristics.

12.64 World Bank. *The Assault on World Poverty: Problems of Rural Development, Education, and Health.* Preface by Robert S. McNamara. Baltimore and London, Johns Hopkins University Press for World Bank, 1975. 425 pp.

A collection of papers analyzing such subjects as the relation of adequate credit to agricultural productivity; of land reform to agricultural production; of education to economic and social development; and of health to increased productivity.

12.65 Yap, L. "Internal Migration and Economic Development in Brazil." *Quarterly Journal of Economics,* Vol. 90, No. 1, February 1976, pp. 119–37.

Argues that rapid urban population increase has spurred economic growth during the postwar period. Finds migration to be a response to income differentials, and a means to change them through its effect on labor and capital productivity.

Productivity, prices, and costs

13.1 Adie, Douglas K. *An Evaluation of Postal Service Wage Rates.* Washington, American Enterprise Institute, 1977. 182 pp.

Evaluates postal workers' wage rates in terms of a human capital model that relies on the inverse relationship between quit rates and wage rates in an industry. Concludes that postal workers are overpaid.

13.2 Almeida, Ozorio de. *Industrial Subcontracting of Low-Skill Service Workers in Brazil.* Doctoral dissertation submitted to Stanford University, 1977. 294 pp.

Argues that persistent disparities in wage rates for low-skill workers should lead industrial employers to subcontract such workers where feasible even though it is illegal in many developing countries. Finds subcontracting widespread among industrial firms, despite their large-scale operations.

13.3 Amsalem, Michel A. *Technology Choice in Developing Countries: The Impact of*

Differences in Factor Costs. Doctoral dissertation presented to Harvard University, 1978. 453 pp.

Examines alternative technologies available to perform industrial operations in the textile and pulp and paper industries. Finds costs of analyzing alternatives in pulp and paper to be too high for consideration of relative factor costs. Also finds frequent adoption of capital-intensive technology in textiles despite availability of labor-intensive technologies and their greater utility.

13.4 Anderson, Frederick, and others. *Environmental Improvement Through Economic Incentives*. Baltimore, Johns Hopkins University Press, 1977. 195 pp.

The authors argue the advantage of charges over direct, regulatory controls in abating environmental pollution. They discuss the economic rationale for charges, and present examples.

13.5 Arndt, H.W., and Sundrum, R.M. "Wage Problems and Policies in Indonesia." *International Labour Review*, Vol. 112, No. 5, November 1975, pp. 369–87.

The authors examine how social functions assigned to wages could be discharged in other ways and how the wage system could be restructured to improve productivity and move towards full employment, optimum labor allocation, and appropriate manpower development.

13.6 Behman, Sara. "Interstate Differentials in Wages and Unemployment." *Industrial Relations*, Vol. 17, No. 2, May 1978, pp. 168–88.

Investigates why the stability of unemployment rates persisted across 27 States between 1970 and 1975, and why wage differences and worker mobility failed to eliminate the differentials.

13.8 Berglund, M.F. "Externalities and Freight Car Supply in the U.S. Rail Network." *Nebraska Journal of Economics and Business*, Vol. 15, No. 2, Spring 1976, pp. 47–58.

Examines the effects of price rigidities on freight car allocation and supply. Points out that rigid charges provide no incentive to use cars economically, creating chronic disequilibrium in freight car supply.

13.9 Blair, R.D., and others. "Blue Cross-Blue Shield Administration Costs: A Study of Non-Profit Health Insurers." *Economic Inquiry*, Vol. 13, No. 2, June 1975, pp. 237–51.

The authors find substantial managerial slack and no economies of scale in contrast to the commercial insurers.

13.10 Blair, Roger D., and Vogel, Ronald J. *The Cost of Health Insurance Administration: An Economic Analysis*. Lexington, Mass., Heath, 1975. 177 pp.

Analyzing the administrative cost structures of commercial health insurers, Blue Cross-Blue Shield, and Medicare, the authors find that the administrative cost ratio falls for commercial insurers, but that Blue Cross-Blue Shield do not display cost-minimizing behavior.

13.11 Blitz, Rudolph C. "A Benefit-Cost Analysis of Foreign Workers in West Germany." *Kyklos*, Vol. 30, fasc. 3, 1977, pp. 479–502.

Finds that substantial benefits arise from the use of foreign workers because the costs of childrearing and the education of the foreign workers were assumed abroad; and that net benefits are not markedly reduced by the monetary remittances of foreign workers.

13.12 Brems, Hans. "An Investment Wage and a Wage Earners' Investment Fund under Steady-State Growth." *Swedish Journal of Economics*, Vol. 77, No. 1, 1975, pp. 13–30.

Examines the impact of such a fund upon the marginal productivity of capital, disposable-income distribution between labor and capital, the propensity to save, and the real wage rate.

13.13 Brogan, R.D., and Erickson, E.W. "Capital-Skill Complementarity and Labor Earnings." *Southern Economic Journal*, Vol. 42, No. 1, July 1975, pp. 83–88.

The authors show that the higher-than-average hourly earnings paid by firms in concentrated industries are related to high capital inputs and associated labor quality.

13.14 Copeland, L.S. "Wage-Inflation, Productivity and Wage-Leadership." *Manchester School of Economics and Social Studies*, Vol. 45, No. 3, September 1977, pp. 258–69.

Reports the results of a cross-section study of wage inflation in 15 industrialized countries. Finds no evidence to support a wage leadership view of inflation.

13.15 den Hartog, H., and Tjan, H.S. "Investments, Wages, Prices and Demand for Labour (A Clay-Clay Vintage Model for the Netherlands)." *De Economist*, Vol. 124, No. 1/2, 1976, pp. 32–55.

Addressing the decline in employment in the Netherlands since 1971, the authors find that it was due to accelerated rises in real labor costs.

13.16 Fonseca, A.J. *Wage Issues in a Developing Economy: The Indian Experience*. Bombay; London and New York, Oxford University Press, 1975. 264 pp.

Examines recent theories of wages that have affected wage policies in developing countries. Discusses the theories in terms of labor surplus, incomes, needs-based wages, and interindustry wage differentials.

13.17 Gunderson, M. "Male-Female Wage Differentials and the Impact of Equal Pay Legislation." *Review of Economics and Statistics*, Vol. 57, No. 4, November 1975, pp. 462–69.

Finds that wages of men were considerably higher than wages of women in jobs with identical job descriptions within narrowly defined occupations of the same establishment.

13.18 Hare, P.G. "Regional Investment Criteria and Shadow Wage Rates." *Scottish Journal of Political Economy*, Vol. 22, No. 3, November 1975, pp. 305–20.

Adapts cost-benefit analysis to apply to a high-unemployment region in a developed economy. Finds that regional "shadow" wage rates are considerably below market wages, indicating the desirability of wage subsidies as against the current tendency in the United Kingdom to favor capital subsidies.

13.19 Hedges, Janice Neipert. "Long Workweeks and Premium Pay." *Monthly Labor Review*, Vol. 99, No. 4, April 1976, pp. 7–12.

Reviews recent trends by industry and occupation, as well as by union and nonunion affiliation.

13.20 Jenness, R.A. *Manpower in Construction*. Ottawa, Economic Council of Canada; distributed by Information Canada, 1975. 141 pp.

Examines the interaction of wages, and productivity and relative wages between 1951 and 1971. Discusses cyclical and seasonal unemployment in construction.

13.21 Kerr, Clark. *Labor Markets and Wage Determination: The Balkanization of Labor Markets, and Other Essays*. Berkeley, University of California Press, 1977. 222 pp.

Presents essays on the disaggregation of labor markets; union power over wages; and the impact of bureaucratic controls.

13.22 Lazear, Edward. "Age, Experience, and Wage Growth." *American Economic Review*, Vol. 66, No. 4, September 1976, pp. 548–58.

Examines the relation between an individual's wage growth pattern and his or her employment history. Finds that young workers receive about one-third of their total compensation in the form of human capital, and that aging is an important determinant of wage growth among them.

13.23 Lokiec, Mitchell. *Productivity and Incentives*. Columbia, S.C., Bobbin Publications, 1977. 509 pp.

Discusses the relation of wage incentives to productivity, with special reference to the garment industry. Treats the function of managerial controls, principles for a wage incentive system, work standards, and related topics.

13.24 Mabry, Bevars D. "The Sources of Overtime: An Integrated Perspective." *Industrial Relations*, Vol. 15, No. 2, May 1976, pp. 248–51.

Specifies the factors associated with lower costs through use of current work force on an overtime basis, as compared with hiring new employees. Finds that overtime may take place during periods of stable demand as well as when demand is increasing.

13.25 McDiarmid, Orville J. *Unskilled Labor for Development: Its Economic Cost.* Baltimore, Johns Hopkins University Press, 1977. 206 pp.

Argues that since the money wage may not measure the impact of a worker's employment upon an economy, economic cost must be priced. Hence, investigates these costs. Also discusses structure of labor markets in developing countries, as well wages and productivity in Far Eastern countries.

13.26 Mixon, J. Wilson, Jr. "Earnings Differentials in U.S. Manufacturing, 1972." *Quarterly Review of Economics and Business*, Vol. 18, No. 1, Spring 1978, pp. 75–82.

Presents estimates by sex and union affiliation. Finds weak association between earnings and nonlabor inputs and no significant regional differentials.

13.27 Moroney, J.R. "Natural Resource Endowments and Comparative Labor Costs: A Hybrid Model of Comparative Advantage." *Journal of Regional Science*, Vol. 15, No. 2, August 1975, pp. 139–50.

Argues that natural resource endowments and comparative labor costs are complementary explanations of the regional distribution of manufacturing output in the United States.

13.28 Norsworthy, J.R. and Fulco, L.J. "Productivity and Costs in the Third Quarter." *Monthly Labor Review*, Vol. 99, No. 2, February 1976, pp. 36–40.

In addition to reporting on recent developments, the authors analyze the concept of, and trends in, unit labor costs.

13.29 Norsworthy, J.R., and Fulco, L.J. "Productivity and Costs in the Private Economy, 1975." *Monthly Labor Review*, Vol. 99, No. 5, May 1976, pp. 5–11.

In addition to discussing recent developments, the authors analyze the relation between productivity and the capital/labor ratio, and of the farm-to-nonfarm shift.

13.30 Norsworthy, J.R., and Fulco, L.J. "Productivity and Costs in the Second Quarter, 1976." *Monthly Labor Review*, Vol. 99, No. 10, October 1976, pp. 23–25.

The authors discuss recent developments, with emphasis on manufacturing.

13.31 Norsworthy, J.R., and Fulco, L.J. "Productivity and Costs in the Third Quarter, 1976." *Monthly Labor Review*, Vol. 100, No. 2, February 1977, pp. 75–79.

After discussing recent developments, the authors analyze pertinent trends in the durable and nondurable manufacturing industries, including cyclical shifts.

13.32 Norsworthy, J.R., and Fulco, L.J. "Productivity and Costs in the Fourth Quarter." *Monthly Labor Review*, Vol. 100, No. 4, April 1977, pp. 68–71.

After discussing recent developments, the authors analyze differences in cost and productivity movements between the total private sector and the nonfarm sector.

13.33 Norsworthy, J.R., and Fulco, L.J. "Productivity and Costs in the First Quarter, 1977." *Monthly Labor Review*, Vol. 100, No. 8, August 1977, pp. 38–40.

The authors report on recent developments and discuss certain factors affecting compensation.

13.34 Norsworthy, J.R., and Fulco, L.J. "Productivity and Costs in the Private Economy, 1976." *Monthly Labor Review*, Vol. 100, No. 9, September 1977, pp. 3–8.

In addition to discussing developments for 1976, the authors discuss measures of the stock of tangible capital, as well as intersectoral shifts in labor productivity.

13.35 Norsworthy, J.R., and Fulco, L.J. "Productivity and Costs in the Third Quarter, *Monthly Labor Review*, Vol. 101, No. 3, March 1978, pp. 42–44.

In addition to discussing recent developments, the authors analyze aspects of deflation of hourly compensation.

13.36 Norsworthy, J.R., and Fulco, L.J. "Productivity and Costs during Recession and

Recovery." *Monthly Labor Review*, Vol. 101, No. 8, August 1978, pp. 31–34.

The authors discuss patterns of recession and recovery, and their impact on productivity, costs, and related variables.

13.37 Norsworthy, J.R., and Fulco, L.J. "Productivity and Costs in the First Quarter of 1978." *Monthly Labor Review*, Vol. 101, No. 9, September 1978, pp. 46–49.

In addition to discussing recent developments, the authors review the relationship between labor costs and compensation, and productivity.

13.38 Ontario, Ministry of Labour. *Equal Pay for Work of Equal Value*. A Discussion Paper, October 1976. 106 pp.

Surveys legislative history in Ontario, female/male earnings and pay differentials, including occupational differentials; and identifies equal value jobs. Also discusses some implications of increased government intervention in the labor market, and labor market reactions to equal pay.

13.39 Perloff, Jeffrey M. *The Wage Change Process in the Construction Industry*. Doctoral dissertation presented to Massachusetts Institute of Technology, 1976. 259 pp.

Explains the workings of construction labor markets in terms of wage changes, changes in the quality of workers hired, and entrances into and exits from the market. Discusses the relations between unions and employers, the duration of unemployment, hours worked, union objectives, and licensing laws and building codes.

13.40 Popkin, Joel. "Some Avenues for the Improvement of Price Forecasts Generated by Macroeconometric Models." *American Journal of Agricultural Economics*, Vol. 57, No. 2, May 1975, pp. 157–63.

Recommends greater disaggregation of the price determination mechanism. Argues that disaggregating output per worker-hour into manufacturing and nonmanufacturing segments is likely to improve estimates of unit labor costs.

13.41 Raisian, John T. *Cyclical Variations in Hours, Weeks and Wages*. Doctoral dissertation presented to the University of California, Los Angeles, 1978. 149 pp.

Examines whether systematic cyclical patterns exist. Finds that hours and workweeks are cyclical but wages are rigid, with contrasts among union and nonunion workers, and between whites and blacks.

13.42 Ray, G.F. "Labour Costs in OECD Countries, 1964-75." *National Institute Economic Review*, No. 78, November 1976, pp. 58–62.

Reports that, as of 1974, British wage costs per hour, including social charges, were the lowest among the 15 industrial countries compared. Notes that this competitive advantage was offset by lower labor productivity.

13.43 "Reconciliation of BEA Compensation and BLS Earnings." *Survey of Current Business*, Vol. 57, No. 5, May 1977, p. 3.

Discusses differences in coverage, use of data, weighting structure, and reported results.

13.44 Riedel, J. "The Nature and Determinants of Export-Oriented Direct Foreign Investment in a Developing Country: A Case Study of Taiwan." *Weltwirtschaftliches Archiv*, Vol. 111, No. 3, 1975, pp. 505–28.

Argues that export-oriented foreign firms are unlikely to adopt technology that is more capital-intensive than that of domestic counterparts. Finds efficiency wage differentials between each investing country and Taiwan to be the most important determinant of the rate of investment.

13.45 Rodgers, G.B. "Nutritionally Based Wage Determination in the Low-Income Labour Market." *Oxford Economic Papers*, Vol. 27, No. 1, March 1975, pp. 61–81.

Tests a theory in which wage levels arise out of the relationships between nutritional intake and the ratio of work time supplied to physical work done.

13.46 Sandell, Steven H., and Shapiro, David. *Work Expectations, Human Capital Accumulation, and the Wages of Young Women*. Columbus, Center for Human Resource Research, The Ohio State University, 1978, 26 pp.

The authors present evidence supporting the hypothesis that on the-job training is positively related to expectations of future labor force attachment; and that on-the-job training is a major determinant of wages and wage growth among young women.

13.47 Schwartz, Arthur R. *The Effect of Benefits and Overtime Costs on the Short Run Cyclical Demand for Labor in the Automobile Industry in Michigan*. Doctoral dissertation presented to the University of Michigan, 1978. 157 pp.

Postulates that employers are using more hours as fringe benefits rise, creating a "fringe barrier." Finds that the growth of fringe benefits relative to overtime premiums has led to increased weekly hours, and a loss of 25,000 employees over the 1958-76 period.

13.48 Scott, M.F. "Investment and Growth." *Oxford Economic Papers*, Vol. 28, No. 3, November 1976, pp. 317–63.

Defines investment as the consumption sacrificed to change the economy. Discusses the relative price changes that accompany growth, leading to a redistribution of wealth from those who undertake the capital expenditures that lead to growth to workers and landlords.

13.49 Shapiro, E. "Cyclical Fluctuations in Prices and Output in the United Kingdom, 1921-1971." *Economic Journal*, Vol. 86, No. 344, December 1976, pp. 746–58.

Examines the conventional view that prices rise at a faster rate near peaks of the business cycle while real output increases more rapidly during the early recovery stages of a cycle. Finds that the behavior of output corresponds, but the behavior of prices diverges from that indicated by the conventional view.

13.50 Smith, S.P. "Pay Differentials between Federal Government and Private Sector Workers." *Industrial and Labor Relations Review*, Vol. 29, No. 2, January 1976, pp. 179–97.

Estimates the pay differential between Federal and private workers. Finds that Federal workers earn substantially more than comparable private workers and that most of the differential is accounted for by "discrimination."

13.51 Steinberg, Bruce Eric. *Social Class Background as a Determinant of Labor Earnings*. Doctoral dissertation presented to The University of Michigan, 1976. 199 pp.

Argues that technical skills do not fully explain labor earnings. Examines the concept of productivity in terms not only of needed technical skills but of "social" skills related to organization of work in a particular economic system. Holds that returns to education and experience reflect both technical and "social" skills.

13.52 U.S. Bureau of Labor Statistics. *Productivity and Costs: Private Business, Non-farm Business, and Manufacturing Sectors*. Washington, Quarterly Release.

Presents indexes and percent changes of output per hour, compensation per hour, unit labor costs, unit nonlabor costs, and related variables, together with pertinent discussions and charts. Data for nonfinancial corporations are also included.

13.53 U.S. Council on Wage and Price Stability. *Report to the President on Prices and Costs in the United States Steel Industry*. October 1977. Washington, U.S. Government Printing Office. 150 pp.

Discusses the cost-price behavior of the steel industry. Analyzes the industry's international competitiveness, emphasizing the question of its efficiency and modernization problems.

13.54 U.S. Department of Labor, Bureau of Labor Statistics. *BLS Measures of Compensation*. Bulletin 1941. Washington, U.S. Government Printing Office, 1977. 118 pp.

Discusses concepts, statistics on the level and structure of pay, statistics on changes in pay, and current-dollar and deflated series, and describes the various series published by BLS.

13.55 U.S. House of Representatives. Committee on Banking, Finance, and Urban Affairs. *Productivity and Anti-Inflation Policy*. Hearing before the Subcommittee on Economic Stabilization. September 14, 1978. Washington, U.S. Government Printing Office. 333 pp.

Includes testimony by various government officials and representatives of organizations representing public officials.

13.56 Warburton-Brown, D. *Investing in Value*. Tokyo, Asian Productivity Organization, 1975. 164 pp.

Deals with the scope, usefulness, and practice of value analysis, a method of identifying and removing all "unnecessary" cost. Also discusses value engineering.

13.57 Weitzman, Martin L. "The New Soviet Incentive Model." *The Bell Journal of Economics*, Vol. 7, No. 1, Spring 1976, pp. 251–57.

Discusses the relation of bonuses to higher targets and the extent to which such targets are met. Believes the new system to be promising, and to be applicable to multidivisional firms in capitalist societies.

13.58 World Bank. *Rural Electrification: A World Bank Paper*. Washington, D.C., 1975. 79 pp.

Considers the economic justification of rural electrification in terms of benefit-cost analysis. Gives pertinent criteria.

13.59 World Health Organization. *Health Economics: Report on a WHO Interregional Seminar*. Geneva, 1975. 44 pp.

Discusses reasons for rising health costs and their containment. Also examines the relevance of the production function concept to the delivery of health services.

Productivity and employment

14.1 Andersen, Leonall C. "*An Explanation of Movements in the Labor Force Participation Rate." Federal Reserve Bank of St. Louis Review*, Vol. 60, No. 8, August 1978, pp. 7–21.

Presents a model relating the overall labor force participation rate to various income variables, population variables, the social security tax rate, and the previous period's participation rate. Argues that the "discouraged worker" hypothesis of labor force participation is of doubtful validity.

14.2 Anderson, Dennis, and Leiserson, Mark. *Rural Enterprise and Nonfarm Employment*. Washington, World Bank, 1978. 87 pp.

The authors find nonfarm rural employment to represent a growing proportion of total rural employment, owing in part to the slow expansion of farm jobs and in part to growing division of labor between farm and nonfarm jobs in these areas. They discuss the use of capital, employment growth, and productivity, as well as development issues.

14.3 Baker, Joe Garrett. *Labor Allocation and Western Energy Development*. Doctoral dissertation submitted to the University of Utah, 1977. 215 pp.

Examines methods of labor information and allocation in small area markets, the constraints to efficiency, and needed policies of market intervention. Offers pertinent case studies.

14.4 Ball, Robert, and Finn, Joseph T. "Labor and Materials Requirements for Sewer Works Construction." *Monthly Labor Review*, Vol. 99, No. 11, November 1976, pp. 38–41.

The authors deal with employee-hours generated, noting a decline for a given level of expenditures. They discuss on-site and off-site labor requirements, distribution of costs, and regional trends.

14.5 Baron, C.G. "Computers and Employment in Developing Countries." *International Labour Review*, Vol. 113, No. 3, May-June 1976, pp. 329–44.

Questions whether the installation of computers is appropriate in low-income and high-unemployment economies. Argues that computer applications that promise economies in the use of scarce resources such as capital are preferable to those that simply replace clerks.

14.6 Barrett, N S., and Södersten, B. "Unemployment Flows, Welfare and Labor Market Efficiency in Sweden and the United States. "*Swedish Journal of Economics*," Vol. 77, No. 3, 1975, pp. 289–302.

The authors argue that while unemployment rates in Sweden are much lower than in the United States, the Swedish labor markets may not be more efficient in matching workers with available jobs. They find that the rate of turnover in the United States is about triple the Swedish rate, and the average duration of unemployment is longer for Swedish than for American workers.

14.7 Bartol, Kathryn, M., and Bartol, Robert A. "Women in Managerial and Professional Positions: The United States and the Soviet Union." *Industrial and Labor Relations Review*, Vol. 28, No. 4, July 1975, pp. 524–34.

The authors conclude that women in the Soviet Union have made much more progress than American women in professional positions, but differences are considerably less in managerial occupations. They infer that many more American women could perform effectively in such professional fields as economics, engineering, and medicine.

14.8 Bartsch, William H. *Employment and Technology Choice in Asian Agriculture*. New York, Praeger, 1977. 125 pp

Based on experience in rice and wheat farming, the author examines the implications of alternative agricultural technologies for employment, and the effects on output and indirect employment.

14.9 Bednarzik, Robert W., and Klein, Deborah P. "Labor Force Trends: A Synthesis and Analysis." *Monthly Labor Review*, Vol. 100, No. 10, October 1977, pp. 3–12.

The authors report on long-term developments among men, women, and teenagers. They discuss relationships to marriage patterns and fertility, educational attainment, and retirement patterns. They also analyze cyclical sensitivities.

14.10 Berch, Bettina Eileen. *Industrialization and Working Women in the 19th Century: England, France and the United States*. Doctoral dissertation presented to the University of Wisconsin—Madison, 1976. 356 pp.

Traces the deterioration in women's working conditions in the textile industry. Discusses protective legislation. Contrasts this evolution with the rise of trade unions organized by male workers, who, rather than also organize women workers, helped promote protective legislation for them, relegating them to a marginal role in the labor force.

14.11 Betancourt, R.R., and Clague, C.K. "An Economic Analysis of Capital Utilization." *Southern Economic Journal*, Vol. 42, No. 1, July 1975, pp. 69–78.

The authors analyze the long-run decision to utilize capital intensively through the use of multiple work shifts. They demonstrate the impact of demand elasticity on the profitability of shift work, and discuss the long-run employment implications of shift work.

14.12 Betancourt, R.R., and Clague, C.K. "The Theory of Capital Utilization in the Labor-Managed Enterprise." *Quarterly Journal of Economics*, Vol. 91, No. 3, August 1977, pp. 453–67.

The authors find that, as in a capitalist firm, shift work is more desirable within a labor-managed enterprise since the weaker the workers' preferences in favor of daytime work, the higher the capital intensity of the production process.

14.13 Bingham, Barbara. "U.S. Civil Works Construction Shows Decrease in Required Labor." *Monthly Labor Review*, Vol. 101, No. 10, October 1978, pp. 24–30.

In addition to discussing pertinent trends, the author deals with underlying technological changes, particularly earthmoving technology, as well as costs and hours.

14.14 Boothby, Daniel W. *The Determinants of Earnings and Occupation for Young Women*. Doctoral dissertation presented to the University of California, Berkeley, 1978. 145 pp.

Evaluates theories explaining why women earn less than men. Argues that commitment to work outside the household is a determinant of which women get the better jobs. Also holds that sex-based socialization affects women's earnings and occupational choice via education and childbearing decisions; and that discrimination is an important cause of sex differences in earnings and occupations.

14.15 Boskin, M.J. "Social Security and Retirement Decisions." *Economic Inquiry*, Vol. 15, No. 1, January 1977, pp. 1–25.

Refers to the rapid decrease in labor force participation of the elderly at the same time that the health of this group has been improving. Differs from studies that attribute the great majority of retirements to poor health. Suggests that the social security system is the principal explanation for earlier retirement.

14.16 Bowman, Charles T. "The Labor Force, Employment, and Economic Growth." In *U.S. Economic Growth from 1976 to 1986: Prospects, Problems, and Patterns*. Vol. 11—*Human Capital*. Studies Prepared for the Use of the Joint Economic Committee, U.S. Congress, May 24, 1977. Washington, U.S. Government Printing Office, pp. 66–80.

Examines labor force developments, especially changes in age composition. Forecasts declining overall unemployment and rising productivity to 1985, and slowed GNP growth thereafter.

14.17 Brown, Gary D. "How Type of Employment Affects Earnings Differences by Sex." *Monthly Labor Review*, Vol. 99, No. 7, July 1976, pp. 25–30.

Explores the effects of schooling, employment continuity, and experience. Also deals with the effects of mobility and motivation.

14.18 Brownlee, W. Elliott, and Brownlee, Mary M. *Women in the American Economy. A Documentary History, 1675-1929.* New Haven, Yale University Press, 1976. 350 pp.

The authors, after an analytical introduction, present texts dealing with the role of women in terms of the industries and occupations to which they were attached.

14.19 Bruggink, Josephus J. *Planning for Employment in the Third World: The Relevance of Economic Theory for a Program of Action.* Doctoral dissertation presented to the University of Oregon, 1978. 209 pp.

Discusses the neoclassical, structural, and technological approaches to theory. Finds the relevance of theory limited, lacking empirical foundation or explanatory power.

14.20 Burstein, Philip Lee. *Problems of Labor Allocation and Absorption in Developing Countries.* Doctoral dissertation presented to Yale University, 1976. 150 pp.

Formulates a model dealing with unemployment and migration as well as output growth. Argues that enforcement of high wage levels compels capital deepening, which minimizes employment growth in the industrial sector and ensures a widening gap between the modern urban subsector and the rest of the urban economy. Deals with agriculture in similar terms.

14.21 Cairncross, Alec, and Mohinder, Puri, eds. *Employment, Income Distribution and Development Strategy: Problems of the Developing Countries: Essays in Honour of H.W. Singer.* New York, Holmes & Meier, 1976. 264 pp.

The authors discuss industrialization, the role of capital goods, collective self-reliance, population policy, and related subjects.

14.22 Coale, Ansley J., ed. *Economic Factors in Population Growth.* New York, Wiley, 1976. 600 pp.

The authors examine the effects of population growth on rural-urban migration, education, employment, the use of resources, and other factors.

14.23 Coale, Ansely J. "Population Growth and Economic Development: The Case of Mexico." *Foreign Affairs,* Vol. 56, No. 1, January 1978, pp. 415–29.

Argues that, while within a 20-25-year span, population growth has little impact on the size of the labor force and land resources, a lower fertility will improve benefits from capital investment and reduce the size of the future labor force, thereby improving employment opportunities.

14.24 Cornwall, J. "The Relevance of Dual Models for Analyzing Developed Capitalist Economies." *Kyklos,* Vol. 30, No. 1, 1977, pp. 51–73.

Discusses the evolution of the dual model theory, the presence of pertinent features in advanced economies, the actual movements of labor during 1950-70, and the likelihood that the dual model explains differences in growth rates.

14.25 Cornwall, John. "Towards Full Employment and Price Stability: A Review of the OECD Report." *Kyklos,* Vol. 31, Fasc. 4, 1978, pp. 662–778.

Summarizes the Report, and offers a critique of the analysis it contains and of the optimistic view of the future of capitalism it offers.

14.26 Darby, M.R. "Three-and-a-Half Million U.S. Employees Have Been Mislaid: Or, an Explanation of Unemployment, 1934-1941." *Journal of Political Economy,* Vol. 84, No. 1, February 1976, pp. 1–16.

Argues that a conceptual error in BLS and Lebergott unemployment estimates for 1930-43 has led to a large overstatement of unemployment levels as a result of counting persons working in countercyclical programs as unemployed.

14.27 Davidson, Gestur B. *Manpower Substitution and Hospital Efficiency.* Doctoral dissertation presented to the University of Minnesota, 1978. 389 pp.

Examines the extent to which nursing personnel in short-term hospitals are technically substitutable for one another, together with the economic considerations involved.

14.28 Day, Richard H., and Singh, Inderjit. *Economic Development as an Adaptive Process: The Green Revolution in the Indian Punjab.* Cambridge, Cambridge University Press, 1977. 326 pp.

The authors present a model to estimate input utilization, capital-labor substitution, technological change, productivity growth, and structural change. They conclude that technology displaces labor in the long run.

14.29 Denton, Frank T., and others. *The Short-Run Dynamics of the Canadian Labor Market.* Ottawa, Economic Council of Canada, 1976. 97 pp.

Applying stock-flow analysis, the authors are concerned with the month-to-month movements of persons into, out of, and within the labor force. They examine implications for unemployment, levels of labor force participation, and related subjects.

14.30 Durand, John Dana. *The Labor Force in Economic Development: A Comparison of International Census Data, 1946-66.* Princeton, Princeton University Press, 1976. 259 pp.

Explores factors and processes of growth and structural change in the labor force which accompany economic development. Deals with measures of labor force, regional patterns, decreases in male participation, and changes in female participation.

14.31 Emi, Koichi. *Essays on the Service Industry and Social Security in Japan.* Tokyo, Kinokunyia Bookstore, 1978. 186 pp.

Discusses changes in employment structure and trends in tertiary industries, with emphasis on the fastest growing ones. Analyzes postwar changes in social security, presenting international comparisons.

14.32 Faaland, J. "Growth, Employment, and Equity: Lessons of the Employment Strategy Mission to the Sudan." *International Labour Review,* Vol. 114, No. 1, July-August, 1976, pp. 1–10.

Finding that the Sudan possesses large areas of fertile but underutilized land, the author recommends concentration on the development of agriculture. This would have far-reaching effects upon employment, but implementation would require educational, economic, and fiscal reforms.

14.33 Fosca, Ralph Robert. *The Relationship Between Plant Concentration and Economic Development.* Doctoral dissertation presented to Indiana University, 1975. 167 pp.

Examines average employment size of plant in relation to size of national market and income level in several industries in a number of countries. Finds a positive relationship with market size, but an indeterminate one with income levels.

14.34 Fernandez, Lionel. *Projections of Information Technology Employment to the Year 2000.* Doctoral dissertation presented to The American University, 1978. 226 pp.

Uses definitions by Fritz Machlup and Daniel Bell to develop projections. Also bases his study on analyses by a Delphi panel of experts relationg to 12 pertinent occupations.

14.35 Feise, Christopher F. *A Radical Analysis of the Transformation of American Agriculture and its Impact on Labor, 1910-1975.* Doctoral dissertation presented to Washington State University, 1978. 210 pp.

Discusses changes in the forces of production and their effects on production relations, and the role of the State in agricultural legislation and research. Notes the substitution of capital for labor, and the resultant impact on productivity. Argues the bias toward capital intensity through research sponsored at Land Grant Colleges.

14.36 Flaim, Paul O., and Fullerton, Howard, Jr. "Labor Force Projections to 1990: Three Possible Paths." *Monthly Labor Review,* Vol. 101, No. 12, December 1978, pp. 25–35.

After discussing population trends and projected participation rates, the authors deal with high-, intermediate- and low-growth paths, as well as socioeconomic implications. They also discuss assumptions and methodology.

14.37 Fullerton, Howard N., Jr., and Flaim, Paul O. "New Labor Force Projections to 1990." *Monthly Labor Review,* Vol. 99, No. 12, December 1976, pp. 3–13.

The authors project slowed growth between 1975 and 1990. They discuss age and sex composition, earlier projections, and methods and assumptions.

14.38 Ginzberg, Eli, ed. *Jobs for Americans.* The American Assembly, Columbia University. Englewood Cliffs, N.J., Prentice-Hall, 1976. 210 pp.

The authors assess full employment and the costs and difficulties of finding jobs for more people. They deal with the responsibility of the Federal Government for job creation; policies to eliminate malfunctions of the labor market; and the limits to which an expanded job program can be pushed.

14.39 Goldberg, Joseph, and others. *Collective Bargaining and Productivity.* Industrial Relations Research Association Series. Madison, Wisc.: Industrial Relations Research Association, 1975. 194 pp.

The authors examine management's concern with productivity, worker and union positions on productivity, and the conditions under which productivity bargaining has emerged. One paper studies the interaction between productivity bargaining and wage controls.

14.40 Gottschalk, P.T. "A Comparison of Marginal Productivity and Earnings by Occupation." *Industrial and Labor Relations Review,* Vol. 31, No. 3, April 1978, pp. 368-378.

Estimates the marginal productivity of eight different occupations. Finds no evidence to support the marginal productivity theory. Also finds an apparently systematic difference between factor payments and productivities.

14.41 Gupta, A.P. "Public Finance and Employment: The Indian Case." *International Labour Review,* October 1975, Vol. 112, No. 4, pp. 279–90.

Argues that public finance policy can greatly help alleviate the persistence of mass unemployment resulting from the low rate of effective investment, significant underutilization of capacity, and declining labor intensity.

14.42 Hannon, Bruce, and others. "Energy and Labor in the Construction Sector." *Science,* Vol. 202, November 24, 1978, pp. 837–47.

Based on an input-output model of the industry, the authors examine the employment generated by it, as well as the impact on labor of various energy-saving construction options.

14.43 Hanushek, Eric A., and Song, Byung N. "The Dynamics of Postwar Industrial Location." *Review of Economics and Statistics,* Vol. 60, No. 4, November 1978, pp. 515–22.

Analyzing earlier theories of decentralization of employment, the author finds that such decentralization has occurred through development of outlying employment nodes, and that employment concentrations outside central cities can offset the disadvantage of distance from the central city.

14.44 Hellinger, Douglas A., and Hellinger, Stephen H. *Unemployment and the Multinationals: A Strategy for Technological Change in Latin America.* Foreword by Barbara Ward. Port Washington, N.Y. and London, National University Publications, Kennikat Press, 1976. 158 pp.

The authors discuss the technological adaptations required to reduce unemployment. They examine labor-intensive technologies and productivity. They also investigate the employment-creating potential of multinational firms.

14.45 Holbik, Karel, and Swan, Philip L. *Industrialization and Employment in Puerto Rico, 1950-1972.* Studies in Latin American Business, No. 16. Austin, University of Texas, Bureau of Business Research, 1975. 82 pp.

The authors discuss reasons for the persistent high unemployment rates among the uneducated, the unskilled, and the young. They also outline the effects of industrial incentives to promote private investment, public investment, and tourism.

14.46 Hussen, Ahmed M. *Economic Feasibility of Mechanical Strawberry Harvesting in Oregon: Estimated Private and Social Benefits and*

Costs. Doctoral dissertation presented to Oregon State University, 1978. 134 pp.

Notes decline in Oregon's share of strawberry output owing to rising costs, which in turn stem from decreases in the supply of pickers. Shows wide range of cost in use of mechanical pickers. Also calculates social costs from worker displacement.

14.47 International Labour Office. *Employment Growth and Basic Needs: A One-World Problem.* A Report of the Director General of the ILO. Tripartite World Conference on Employment, Income, Distribution and Social Progress and the International Division of Labour. Geneva, 1976. 177 pp.

The report seeks to formulate policies to increase volume and productivity of employment, involving some redirection of investment and land utilization.

14.48 International Labour Office. *Tripartite World Conference on Employment, Income Distribution and Social Progress, and the International Division of Labour: Background Papers.* Volume 1: *Basic Needs and National Employment Strategies.* Geneva, June 1976. 195 pp.

Papers exploring such subjects as the concepts of poverty, unemployment, and underemployment; the relation between economic growth, redistribution, and resource use; appropriate technologies; and employment strategies in India, the USSR, and industrialized market economy countries.

14.49 Irvin, George W. *Roads and Redistribution: Social Costs and Benefits of Labour-Intensive Road Construction in Iran.* Geneva, International Labour Office, 1975. 162 pp.

Concerned with the relation between the creation of employment opportunities and choice of technology, particularly the institutional biases in technology choice, the author explores why road construction in Iran (and other developing countries) is highly capital intensive despite the availability of large numbers of unskilled workers.

14.50 Jenkins, Glenn P., and Kuo, Chun-Yan. "On Measuring the Social Opportunity Cost of Permanent and Temporary Employment." *Canadian Journal of Economics,* Vol. 11, No. 2, May 1978, pp. 220–39.

To evaluate the impact of job creation in a slow-growth region, the authors develop a model and find the social cost of creating temporary employment to be higher than for permanent employment.

14.51 Judge, Ken. "Economic Analysis and Productive Efficiency in the Personal Social Services: The Differential Use of Manpower." *International Journal of Social Economics,* Vol. 3, No. 2, 1976, pp. 89–108.

Argues that the relative cost of employing social workers rose during the recent period of expansion; and that with no further growth in prospect, social work output could be increased with no extra cost by replacing some social workers with less expensive labor inputs.

14.52 Kelley, S.C., and others. *Manpower Forecasting in the United States: An Evaluation of the State of the Art.* Columbus, Ohio, Center for Human Resource Research, Ohio State University, 1975. 257 pp.

The authors assess the adequacy of the theoretical and empirical foundations for forecasting outputs, input requirements, and occupations.

14.53 Lal, Deepak, and others. *Men or Machines: A Study of Labor-Capital Substitution in Road Construction in the Philippines.* Geneva, International Labour Office, 1978. 164 pp.

Examines the feasibility, social desirability, and implementation of labor-intensive techniques for road construction. Discusses specific techniques, e.g., wheelbarrows, hand excavation, etc. Examines productivity and costs.

14.54 Lewis, Frank D. *Explaining the Shift of Labor from Agriculture to Industry in the United States, 1869-1899.* Doctoral dissertation presented to The University of Rochester, 1976. 129 pp.

Evaluates impact of the shift on productivity growth in agriculture and industry and on the supply of land. Also examines the increase in per capita income, and the role of the frontier. In addition, investigates decline in farm wage rates.

14.55 Martin, Fernand. *Regional Aspects of the Evolution of Canadian Employment.* Ottawa, Economic Council of Canada, 1976. 110 pp.

Discusses the method of shift-and-share analysis in determining the ability of regions to adjust to structural change in the economy. Examines structural and regional aspects of employment changes, 1961-70, region by region.

14.56 McCleary, W.A. *Equipment versus Employment. A Social Cost-Benefit Analysis of Alternative Techniques of Feeder Road Construction in Thailand.* Geneva, International Labour Office, 1976. 160 pp.

In light of employment problems facing Thailand and other developing nations, the author seeks to identify technically efficient labor-intensive techniques of road construction; to measure costs of alternative capital-intensive techniques; and to formulate policies for socially optimai techniques.

14.57 Mellor, John William. *The New Economics of Growth: A Strategy for India and the Developing World.* Ithaca, Cornell University Press, 1976. 335 pp.

Presents an employment-oriented strategy for economic growth, based on agricultural development. Discusses the relation between agricultural modernization and the poor, and between industrial and rural growth.

14.58 Miracle, Marvin P. "Interpretation of Backward-Sloping Labor Supply Curves in Africa." *Economic Development and Cultural Change*, Vol. 24, No. 2, January 1976, pp. 399–406.

Tests the operation of backward-sloping supply curve in Kenya. Concludes that workers resisting the move to better paying jobs are economically rational if account is taken of the high costs of forsaking village life.

14.59 Mukerjee, Gautam. *Capital Accumulation and Economic Growth.* Doctoral dissertation presented to the State University of New York at Buffalo, 1978. 144 pp.

Based on Marx, the author develops a mathematical approach to the relationship between the exploitation of labor and economic growth.

14.60 Nickless, Pamela J. *Changing Labor Productivity and the Utilization of Native Women Workers in the American Cotton Textile Industry, 1825-1860.* Doctoral dissertation presented to Purdue University, 1976. 223 pp.

Examining the impact of Irish immigration on worker behavior and productivity, the author constructs a measure weighted by skill characteristics rather than sex characteristics. Also calculates a total productivity measure.

14.61 Nordlund, Willie J., and Mumford, John. "Estimating Employment Potential in U.S. Energy Industries." *Monthly Labor Review*, Vol. 101, No. 5, May 1978. pp. 10–13.

The authors relate employment increases to increasing reliance on domestic energy sources, and construction of power plants.

14.62 Norsworthy, J.R., and Fulco, L.J. "Productivity and Costs, First Quarter, 1976." *Monthly Labor Review*, Vol. 99, No. 7, July 1976, pp. 31–34.

In addition to discussing recent developments, the authors analyze movements in real compensation since 1947.

14.63 Norsworthy, J.R., and Fulco, L.J. "Productivity and Costs in the Second Quarter." *Monthly Labor Review*, Vol. 101, No. 12, December 1978. pp. 61–64.

In addition to discussing recent developments, the authors deal with the impact of changes in hours and employment on productivity.

14.64 Pack, H. "The Substitution of Labour for Capital in Kenyan Manufacturing." *Economic Journal*, Vol. 86, No. 341, March 1976. pp. 45–58.

Considers the relationship between the initial choice of technique and the growth of productivity. Reports that much of the substitution of labor for capital has occurred in auxiliary production processes, such as material handling and packaging.

14.65 Park, Dong Un. *Sources of Employment Growth in the Korean Manufacturing Sector, 1963-1973.* Doctoral dissertation presented to the University of Hawaii, 1976. 114 pp.

Defines such sources as real wage growth, returns to scale, domestic share of value added, export share of value added, growth of export sector, and residual. Identifies their relative importance. Also identifies the more important industries.

14.66 Pryor, F.L. "Some Costs and Benefits of Markets: An Empirical Study." *Quarterly Journal of Economics*, Vol. 91, No. 1, February 1977, pp. 81–102.

Compares a group of market and centrally-planned economies. Argues that marketing personnel in market economies are about twice the number in centrally planned economies; and that the extra shopping time of consumers in these economies is about equal to the labor time saved in the economy by having fewer marketing personnel.

4.67 udichery, Joseph P. *Planning, Employment and Economic Growth in India*. Doctoral dissertation presented to the University of Pittsburgh, 1975. 260 pp.

Argues that Indian planning has failed in distributing the national income so as to increase employment and consumption of the poorer sectors of Indian society, even while succeeding in spurring growth. Analyzes different approaches to employment creation. Urges a trade-off policy, which would raise employment and consumption at the expense of growth.

14.68 Raz, Mahmood Alam. *Structural Changes in the Labor Force and Economic Development in India, 1901-1961*. Doctoral dissertation submitted to Stanford University, 1977. 345 pp.

Disaggregating manufacturing and services, the author finds that capital goods industries grew impressively. Believes that transformation accelerated with the introduction of planning in the early fifties. Notes shifts of the labor force from cottage industries to factories.

14.69 Sabolo, Y. "Employment and Unemployment, 1960-90. "*International Labour Review*, Vol. 112, No. 6, December 1975, pp. 401–17.

Presents estimates and forecasts of employment and unemployment for each of four major economic sectors requiring different levels of skill and capital investment. Anticipates declines in unemployment in the developed countries during the 1980s but increased unemployment and underemployment in the developing countries.

14.70 Sassu, Antonio. "Employment, Technical Progress and Steady Growth." *Rivista Internazionale di Scienze Economiche e Commerciali*, Vol. 22, No. 6, June 1975, pp. 526–40.

Examines the results of introducing technological change, particularly the process of reemploying displaced workers. Formulates model to aid in analyzing the consequences of rapid capital accumulation, especially in countries with "excess" labor supply.

14.71 Schultze, Charles L., and others. *Improving the Long-Term Performance of the U.S. Economy*. A Symposium. Washington, Committee for Economic Development, 1977. 29 pp.

The authors deal with efforts to achieve high employment; evaluate the role of Congress in a "new economic era"; and outline changes in the relation between politics and economics.

14.72 Sheifer, Victor J. "How Benefits will be Incorporated into the Employment Cost Index." *Monthly Labor Review*, Vol. 101, No. 1, January 1978, pp. 18–26.

Discusses the framework of the Employment Cost Index, and the measurement of wage and salary changes and of benefits. Also discusses the determination of practices in the base period, base period hourly expenditure rates, and revision and rebasing procedures.

14.73 Shwinger, Pinhas. *Wage Incentive Systems*. New York, Wiley, Halsted Press. 1975. 200 pp.

Analyzes incentive plans and collective incentive systems. Also examines effects of incentives on effort, output, wages, work performance, and the advantages to workers and to management. Also studies the effects on productivity.

14.74 Souza, P.R., and Tokman, V.E. "The Informal Urban Sector in Latin America." *International Labour Review*, Vol. 114, No. 3, November-December 1976, pp. 355-65.

The authors argue that rapid economic growth in Latin America has yielded little productive employment. They analyze the informal urban sector and the characteristics of those who work in it.

14.75 Stevens, R.G. "Measuring the Imaginary: The Employment Effect of Imported Steel

Revisited." *Industrial and Labor Relations Review*, Vol. 29, No. 1, October 1975, pp. 97–106.

Compares the trend in steel imports with the course of employment, separations and layoffs, productivity, order backlogs, and capacity utilization in the U.S. steel industry. Concludes that in 1969-74, as in 1959-69, imports did not eliminate a significant number of steelworker jobs.

14.76 Strumpel, Burkhard. "Induced Investment or Induced Employment—Alternative Visions of the American Economy." In *U.S. Economic Growth from 1976 to 1986: Prospects, Problems, and Patterns*. Vol. 8—*Capital Formation: An Alternative View*. Studies Prepared for the Use of the Joint Economic Committee, U.S. Congress. Washington, U.S. Government Printing Office, pp. 33–55.

Argues that in view of growing environmental and raw material problems, large infusions of capital will not spur economic growth and high employment. Argues further that human resource development and public service employment should be emphasized.

14.77 Tabah, Leon, editor. *Population Growth and Economic Development in the Third World*. 2 vols. Ordina Editions for the International Union for the Scientific Study of Population, Liege, 1976. 816 pp.

The authors deal with aspects of human capital, food and agriculture, migration, and other subjects. They argue for labor-intensive forms of production.

14.78 Takagi, Yasuoki, *Economic Development of Countries with Abundant Labor Force*. Doctoral dissertation presented to Vanderbilt University, 1975. 212 pp.

Defines basic concepts such as dualism, disguised unemployment, and rural-urban migration. Analyzes the last-mentioned concept in relation to urban unemployment. Argues that marketed agricultural output must be expanded by increasing productivity before development can proceed. Also discusses the role of capital accumulation.

14.79 Teubal, Miguel. *Policy and Performance of Agriculture in Economic Development: The Case of Argentina*. Doctoral dissertation presented to the University of California, Berkeley, 1975. 193 pp.

Estimates the financial surplus of Argentinian agriculture, 1950-67. Analyzes its trend. Argues that the large surpluses generated over the 1880-1930 period subsequently gave way to a "labor-surplus" economy, and that, agricultural interests having reaffirmed their control, intensive mechanization took place, displacing labor.

14.80 Timmer, C. Peter, and others. *The Choice of Technology in Developing Countries: Some Cautionary Tales*. Cambridge, Harvard University, 1975. 114 pp.

The authors argue that the use of less capital-intensive methods of production than those used in advanced countries could be one solution to the problems of unemployment in developing countries.

14.81 Tyler, William G. "Manufactured Exports and Employment Creation in Developing Countries: Some Empirical Evidence." *Economic Development and Cultural Change*, Vol. 24, No. 2, January 1976. pp. 355–73.

Argues that export of manufactures is not a general solution for the economic development of labor-surplus countries.

14.82 U.S. Agency for International Development, Office of Labor Affairs. *Manpower and Employment Development for Economic Growth and Social Justice*. Washington, April 1975. 298 pp.

A manual designed to inform development officials how manpower and employment programs function as part of a total development effort. Surveys unemployment and underemployment in developing countries, rural-urban migration, employment problems in rural areas, income distribution, and the factors underlying high unemployment and underemployment.

14.83 U.S. Department of Labor, Special Study Group on Jobs and Capital Formation. *An Analysis of Capital Formation and Employment*. Washington, July 22, 1975. 52 pp. + appendixes.

Discusses assumptions underlying economic growth, and productivity and employment targets for the 1973-85 period and subperiods. Also deals with financial requirements to attain these targets. Utilizes and discusses projection methods developed by BLS.

14.84 Vanek, J., and Iovicic, M. "Capital Market and Income Distribution in Yugoslavia: A Theoretical and Empirical Analysis." *Quarterly Journal of Economics*, Vol. 89, No. 3, August 1975, pp. 432–43.

The authors find that capital in Yugoslavia is underpriced because workers earn imputed rents of capital, which are significantly greater in capital-intensive industries. They provide estimates of the scarcity rent (shadow price) of capital and the corresponding pure incomes of labor.

14.85 Walker, James L. *Economic Development and Black Employment in the Nonmetropolitan South*. Austin, Center for the Study of Human Resources, University of Texas, 1977. 174 pp.

Explores black participation in nonfarm economic growth in 244 nonmetropolitan counties. Finds nonfarm industry to avoid these counties in favor of others predominantly white. Also finds that blacks do not share proportionately in job growth even in predominantly black counties, being underrepresented particularly in white-collar jobs.

Productivity and economic growth

15.1 Adelman, Irma. "Interaction of U.S. and Foreign Economic Growth Rates and Patterns." In *U.S. Economic Growth from 1976 to 1986: Prospects, Problems, and Patterns*. Vol. 12—*Economic Growth in the International Context*. Studies Prepared for the Use of the Joint Economic Committee, U.S. Congress, May 23, 1977. Washington, U.S. Government Printing Office, pp. 1—15.

Examines impact of slower U.S. growth on the growth of less developed countries, and generally the impact of the U.S. economy on other economies. Argues the deleterious effects upon less developed countries of slowed U.S. growth.

15.2 Adelman, I. "Growth, Income Distribution and Equity-Oriented Development Strategies." *World Development*, Vol. 3, Nos. 2 & 3, February-March 1975, pp. 67–76.

Questions use of conventional development programs to increase human welfare. Draws on recent findings and historical experience to suggest that equitable growth requires reorientation of development strategies.

15.3 Ahmad, Ausaf. *The Sources of Growth and Productivity in Indian Manufacturing: An Empirical Analysis*. Doctoral dissertation presented to Northern Illinois University, 1977. 202 pp.

Examines the contribution of labor input, capital input, and total productivity to the growth of 21 industrial groups, 1960-70. Finds light and consumer goods industries to be more efficient than capital goods industries.

15.4 Albin, Peter S. *Progress without Poverty: Socially Responsible Economic Growth*. New York, Basic Books, 1978. 229 pp.

Argues for growth policies that avert ecological disaster and improve welfare. Explores "unbalanced" growth in modern capitalism, focusing on income distribution, education, and other variables.

15.5 Alexander, Robert J. *A New Development Strategy*. Maryknoll, N.Y., Orbis Books, 1976. 169 pp.

Examines import substitution as an economic development strategy, emphasizing its limitations. Outlines a method for deciding upon priorities. Argues that entrepreneurship rather than saving is the problem. Surveys problems of the "post-import substitution phase," and the dangers they hold for social stability.

15.6 Allen, G.C. *The British Disease: A Short Essay on the Nature and Causes of the Nation's Lagging Wealth*. Hobart Paper No. 67. London, Institute of Economic Affairs, 1976. 79 pp.

Identifies some sources of Great Britain's relative economic decline, from the Industrial Revolution forward. Claims the decline can be directly linked to the failure to adapt to evolving technological and industrial demands.

15.7 Allvine, Fred C., and Tarpley, Fred A. "The New State of the Economy: The Challenging Prospect." In *U.S. Economic Growth from*

1976 to 1986: Prospects, Problems, and Patterns. Vol. 7—*The Limits to Growth*. Studies Prepared for the Use of the Joint Economic Committee, U.S. Congress. Washington, U.S. Government Printing Office, pp. 46–61.

The authors argue that societal attitudes have shifted from an ethic of pro-growth to one of conservation; that innovation in industry has slackened; and that energy costs have risen—all of which constitutes an erosion of major sources of growth.

15.8 Anderson, F.J. "Demand Conditions and Supply Constraints in Regional Economic Growth." *Journal of Regional Science*, Vol. 16, No. 2, August 1976. pp. 213–24.

Analyzes preconditions for regional expansion, including levels of factor prices that induce inward movements of inputs, and the relaxing of regional supply constraints.

15.9 Ashworth, W. "Typologies and Evidence: Has Nineteenth-Century Europe a Guide to Economic Growth?" *Economic History Review*, 2nd series, Vol. 30, No. 1, February 1977, pp. 140–58.

Considers typologies of growth by Rostow, Gerschenkron, and some Marxists, and argues that the evidence does not fit any of the typologies for several countries. Also argues that a regional analysis of growth is more illuminating than a national analysis and calls for greater emphasis on the contribution of agriculture.

15.10 Askari, Hossein, and Cummings, John Thomas. *Middle East Economies in the 1970s: A Comparative Approach*. New York, Praeger, 1976. 581 pp.

The authors assess the advantages and bottlenecks in economic development found in varying degrees in the Middle East. They consider oil, agriculture, industry, and manpower and employment.

15.11 Austin, Lewis, ed. *Japan: The Paradox of Progress*. New Haven, Yale University Press, 1976. 338 pp.

A collection of papers dealing with the economic variables affecting Japan's future growth, including land, labor, capital, structure of trade, and technology. Papers also deal with political variables, and with conflicting values bearing on tradition and modernity.

15.12 Bagchi, A.K. "Deindustrialization in India in the Nineteenth Century: Some Theoretical Implications." *Journal of Development Studies*, Vol. 12, No. 2, January 1976, pp. 135–64.

Argues that capitalism in its international aspects often had opposite effects in the advanced countries and their overseas offshoots, and that this was true for India prior to 1914. Also argues that technological change today often disrupts Third World societies. Proposes to spur the development of localized economies to overcome such effects.

15.13 Bairoch, Paul. *The Economic Development of the Third World since 1900*. Berkeley, University of California Press, 1975. 260 pp.

Surveys developments in population, agriculture, extractive and manufacturing industries, foreign trade, the labor force and employment, and other variables.

15.14 Beckerman, Wilfred. *Two Cheers for the Affluent Society: A Spirited Defense of Economic Growth*. New York, St. Martin's Press, 1975. 238 pp.

Argues that claims of rising pollution and declining supplies of raw materials have no basis. Contends that higher output makes for more efficient use of resources by enabling acquisition of technical skills and organizational abilities.

15.15 Bhagwati, Jagdish N., ed. *The New International Economic Order: The North-South Debate*. Cambridge, Mass., MIT Press, 1977. 390 pp.

The authors consider desirable responses by developed countries to the demands of the less developed countries. They deal with resource transfers; international trade; world food problems; and technology transfer and diffusion.

15.16 Blanchfield, William C. *Economic Development*. Columbus, Grid. 1976. 216 pp.

Surveys problems and theories of economic development. Also presents case studies, including Soviet Russia, China, Japan, and Brazil. Analyzes the political and social characteristics of underdeveloped countries, and economic motives and behavior.

15.17 Boltho, Andrea. *Japan: An Economic Survey, 1953-1973*. New York, Oxford University Press, 1975. 204 pp.

Discusses growth and cyclical variations, and assesses weaknesses and strengths of the development process. Underlines factors contributing most to the rapid rate of economic growth, focusing on labor supply and capital formation.

15.18 Bonelli, Regis. *Growth and Technological Change in Brazilian Manufacturing Industries During the Sixties*. Doctoral dissertation presented to the University of California, Berkeley, 1975. 289 pp.

Calculating the growth rates of diverse inputs, the author derives residual growth rates for 2-digit industries. Finds growth in the stock of capital goods to have contributed most to output growth. Also studies the factors impinging upon interindustry growth differentials.

15.19 Bonner, Margaret Purdie. *Health and Economic Growth in Less Developed Countries*. Doctoral dissertation presented to the University of Illinois at Urbana-Champaign, 1976. 181 pp.

Studies investment in health in relation to agricultural production and growth in per capita real GNP. Finds health to be outstanding in importance for poorer countries, and to result in economic gains for the more advanced countries as well.

15.20 Bratland, John C. *Environmental Management, Optimal Economic Growth and Endogenous Technical Change*. Doctoral dissertation presented to The George Washington University, 1977. 294 pp.

Demonstrates that long-run changes in production technology induced by environmental standards are a crucial adaptive link between continued economic growth and maintenance of environmental quality.

15.21 Cairncross, Alec. *Inflation, Growth and International Finance*. Albany, State University of New York Press, 1975. 130 pp.

Presents papers dealing with such subjects as the forces governing the rate of technical change, economic growth in Britain, and long-term controls of international capital movements.

15.22 Carré, J.J. and others. *French Economic Growth*. Stanford, Stanford University Press, 1975. 581 pp.

The authors find a quickening in the growth of labor productivity and in total factor productivity in industry. They attribute productivity gains to a more optimal allocation of the modernized capital stock. They also credit relatively long hours of work, high labor mobility, and strong commitment to work.

15.23 Cash, William L., and Oliver, Lucy R., eds. *Black Economic Development. Analysis and Implications*. Ann Arbor, The University of Michigan, 1975. 426 pp.

A compendium of papers dealing with the historical and contemporary setting of economic development in the black community, and assessing problems and current programs. Topics discussed include wealth accumulation of black and white families; barriers to black participation in the economy; black banking and business development; and others.

15.24 Cassimatis, Peter J. *Construction and Economic Development: A Case Study, and International Comparisons of Productivity*. Teaneck, N.J., Fairleigh Dickinson University, August 1975. 99 pp.

Based on experience in Greece, the author analyzes demand characteristics, interindustry relations, employment, and earnings. He also presents international comparisons of construction productivity.

15.25 Cauvin, Henri. *The Haitian Economy: A Case Study of Underdevelopment*. Doctoral dissertation presented to the New School for Social Research, 1977. 412 pp.

Examines the impact of colonialism and the development of an agrarian colonial bourgeoisie. Argues that economic concentration, needed for economic development, was checked, resulting in failure of the forces of production to develop.

15.26 Cetron, Marvin J., and Sugarek, Sharon E. "Zero Population Growth and Economic Growth." In *U.S. Economic Growth from*

1976 to 1986: Prospects, Problems, and Patterns. Vol. 11—*Human Capital*. Studies Prepared for the Use of the Joint Economic Committee, U.S. Congress, May 24, 1977. Washington, U.S. Government Printing Office, pp. 66-81.

The authors examine the effects of zero population growth on per capita wealth and family size, and present projections of consumption expenditures under various assumptions.

15.27 Chenery, Hollis, and Syrquin, Moises. *Patterns of Development, 1950-1970* New York, Oxford University Press, 1975. 234 pp.

The authors examine principal changes in economic structure that normally accompany economic growth. They focus on resource mobilization and allocation, particularly those aspects which promote growth.

15.28 Chilas, John. *The Economic Development of Greece. The Post World War II Period*. Doctoral dissertation submitted to The University of New Mexico, 1976. 233 pp.

Examines main features of the subject and presents a model seeking to explain them.

15.29 Coles, Flournoy A., Jr. *Black Economic Development*. Chicago, Nelson Hall, 1975. 222 pp.

Suggests that development is dependent on effective programs in capital accumulation, increased participation in technological progress, and improvement in the quality of the black labor force.

15.30 Cooper, Chester L., ed. *Growth in America*. Contributions in American Studies Series, No. 21. Westport, Conn., Greenwood Press, 1976. 262 pp.

A collection of essays discussing growth as both a value and an issue. Includes the views of those who would limit as well as those who would promote growth.

15.31 Cornwall, John. *Modern Capitalism: Its Growth and Transformation*. New York, St. Martin's Press, 1977. 226 pp.

Examines the growth of market economies over the post-World War II era in terms of the transformation of output and employment patterns. Discusses the "dual" structure of capitalism, and deals extensively with manufacturing, as well as with the role of exports in output growth.

15.32 Cruz, Baez. *Export Agriculture under Economic Development: A Geographic Analysis of the Decline of Sugarcane Production in Puerto Rico*. Doctoral dissertation presented to The University of Wisconsin, 1977. 239 pp.

Argues the relationship between economic development and the decline of traditionally structured agricultural export sectors. Finds sugarcane production to suffer from great comparative disadvantages, manifest in declining labor and sugarcane yields, as well as topographic obstacles to mechanization.

15.33 Cunningham, Bill. "Productivity's Link to Economic Growth." *AFL-CIO American Federationist*, Vol. 85, No. 1, March 1978, pp. 1–5.

Argues that productivity grows the faster, the lower unemployment and the stronger consumer demand. Also discusses the relation of productivity to labor and other costs and to profits, as well as the role of collective bargaining agreements in improving productivity.

15.34 Dacy, D.C. "Foreign Aid, Government Consumption, Saving and Growth in Less Developed Countries." *Economic Journal*, Vol. 85, No. 339, September 1975, pp. 548–61.

Shows that foreign aid can produce a lower long-term growth rate than would occur without aid. Assumes that government uses some of the aid to supplant saving, thereby freeing revenues for consumption.

15.35 Daly, Herman E. *Steady-State Economics: The Economics of Biophysical Equilibrium and Moral Growth*. San Francisco, Freeman, 1977. 185 pp.

Discusses various pro-growth arguments. Defends the steady-state view, in part because it recognizes the finiteness of resources.

15.36 Daly, Herman E. "The Transition to a Steady-State Economy." In *U.S. Economic Growth from 1976 to 1986: Prospects, Problems, and Patterns*. Vol. 5—*The Steady-State Economy*.

Studies Prepared for the Use of the Joint Economic Committee, U.S. Congress, December 2, 1976. Washington, U.S. Government Printing Office, pp. 13–39.

After discussing concepts, the author describes policies for a steady-state economy.

15.37 De Bever, Leonardus J. *The Role of the State in Early Japanese Growth.* Doctoral dissertation presented to The University of Wisconsin, 1976. 339 pp.

Based on the results of an econometric model, the author argues that Japanese growth was determined by "exogenous" demographic and technological factors, rather than by government policy, although such policy was contributory.

15.38 Donges, J.B. "A Comparative Survey of Industrialization Policies in Fifteen Semi-Industrial Countries." *Weltwirtschaftliches Archiv*, Vol. 112, No. 4, 1976, pp. 626–59.

Shows that import substitution policies generally played a key role even beyond the early phases of industrialization. Finds that the switch to such policies proved to be conducive to rapid economic growth.

15.39 Dubey, Vinod. *Yugoslavia: Development with Decentralization: Report of a Mission Sent to Yugoslavia by the World Bank.* Baltimore and London, Johns Hopkins University Press for the World Bank, 1975. 490 pp.

Outlines the development experience and problems of the Yugoslav economy since 1947, when the first postwar plan was implemented, showing how Yugoslavia has combined rapid economic growth with fundamental institutional changes. Among major factors viewed as likely to have influenced growth are improvement in resource allocation and maintenance of the rate of aggregate savings.

15.40 Duncan, Joseph W. "Long-Term Economic Growth Forecasts in the Federal Government." In *U.S. Economic Growth from 1976 to 1986: Prospects, Problems, and Patterns.* Vol. 6—*Long-Run Forecasts of Economic Growth.* Studies Prepared for the Use of the Joint Economic Committee, U.S. Congress, December 16, 1976. Washington, U.S. Government Printing Office, pp. 76–100.

Discusses national and regional models, environment and energy models, and principal model users.

15.41 Edison Electric Institute. *Economic Growth in the Future: The Growth Debate in National and Global Perspective.* New York, McGraw-Hill, 1976. 423 pp.

A collection of papers finding that U.S. growth in the next quarter-century will probably be limited by capital shortages rather than by shortages of energy or raw materials; that improvement in environmental quality can be made consistent with economic growth if controls are supplemented by economic incentives; and that energy demand will grow more slowly than GNP.

15.42 Elmaihub, Saleh H. *Public Investment in a Capital Surplus Country: The Case of Libya.* Doctoral dissertation presented to Colorado State University, 1977. 307 pp.

Finds that rapid economic growth, induced by the emergence of an oil sector, results in large investment in productive activities and social overhead, but is constrained by shortages of factors such as skilled labor.

15.43 Fallenbuchl, Zbigniew, ed. *Economic Development in the Soviet Union and Eastern Europe.* Vol. I. *Reforms, Technology, and Income Distribution.* Vol. II. *Sectoral Analysis.* Praeger, New York and London, 1975 and 1976. 354 pp. and 409 pp.

Compendia of conference papers dealing chiefly with the subjects announced by the volume titles.

15.44 Fox, Lisa Parson. *Building Construction as an Engine of Economic Growth: An Evaluation of the Colombian Development Plan.* Doctoral dissertation presented to The University of North Carolina, 1976. 237 pp.

Presents a model focused upon urban housing. Tests existence of demand, potential for increased savings, and underutilization of capital. Finds that the provision of adequate housing financing transforms the latent demand for housing into effective demand.

15.45 Fromm, Gary. "Forecasts of Long-Run Economic Growth." In *U.S. Economic Growth from 1976 to 1986: Prospects, Problems, and Patterns.* Vol. 6—*Long-Run*

Forecasts of Economic Growth. Studies Prepared for the Use of the Joint Economic Committee, U.S. Congress, December 15, 1976. Washington, U.S. Government Printing Office, pp. 1–37.

Discusses methods and concepts, and presents projections.

15.46 Gayer, Arthur D.; Rostow, W.W.; and Schwartz, Anna Jacobson. *The Growth and Fluctuation of the British Economy, 1790-1850: An Historical, Statistical, and Theoretical Study of Britain's Economic Development.* Vols. I and II. New York, Harper & Row, 1975. 528 pp; 1,028 pp.

In the first part of their presentation, the authors employ a business-cycle approach. Various time series are offered and discussed. Volume II contains theoretical analyses based on the findings in Volume I.

15.47 Gehrels, Franz. *Optimal Growth of an Open Economy.* Göttingen, Germany, Vandenhoeck & Ruprecht, 1975. 160 pp.

Examines how steady growth conditions are modified by the introduction of different types of technical programs, both for a closed and an open economy. Shows that optimal growth can be achieved with a slow as well as a fast rate of technical progress.

15.48 Greenfield, Stuart J. "Growth and Poverty: An Analysis of Trickling Down in a Regional Context." *Growth and Change,* Vol. 7, No. 3, July 1976, pp. 20–25.

Examines a sample of multicounty areas that are remote from urban areas. Argues that this type of analysis, as opposed to one at the national level, permits a better understanding of the connection between economic growth and poverty. Finds that growth had a marked impact in decreasing poverty rates, and that whites and nonwhites were equally affected by economic growth.

15.49 Hagen, Everett E. *The Economics of Development.* Homewood, Ill., Irwin, 1975. 563 pp.

Deals with the relation of economic growth to resources, distribution of income, and food supply. Also discusses growth theories, entrepreneurship, import substitution, and other pertinent subjects.

15.50 Hasan, Parvez. *Korea: Problems and Issues in a Rapidly Growing Economy.* A World Bank Country Economic Report. Baltimore, Johns Hopkins University Press, 1976. 277 pp.

Discusses problems in sustaining Korea's rapid rate of expansion. Deals with resource mobilization and allocation, and rural-urban income disparities.

15.51 Haites, Erik F., and others. *Western River Transportation: The Era of Early Internal Development, 1810-1860.* Baltimore, Johns Hopkins University Press, 1975. 209 pp.

The authors explore the evolution of market forces and the effects of productivity-raising improvements (passed on as cost reduction) as vehicles of growth.

15.52 Hazari, B.R., and Kingma, O.T. "Trade and Linkages in Economic Development: The Position of the Agricultural Sector in Australia and New Zealand." *Economic Record,* Vol. 52, No. 139, September 1976, pp. 362–72.

The authors examine the view that emphasis on export of primary products, while initially raising productivity, may ultimately produce technological stagnation. They argue that development in several products within the agricultural sector has been important in the economic development of Australia and New Zealand.

15.53 Heilbroner, Robert (with Aaron Singer). *The Economic Transformation of America.* New York. Harcourt, Brace, Jovanovich, 1977. 276 pp.

Deals with the beginnings of economic growth, industrialization and its technology, changes in industrial structure, conditions of work and standard of living, the evolution from laissez-faire to the "mixed economy," and the limitation of growth.

15.54 Hickman, Bert C., and Coen, Robert M. *An Annual Growth Model of the U.S. Economy.* New York, American Elsevier, 1976. 287 pp.

The authors present a macroeconomic model designed to predict the annual time paths of major aggregative variables over a 5- to 10-year span. They introduce interrelated demand functions for labor and capital and discriminate among concepts of potential, full-employment, and capacity output.

15.55 Hidasi, G. "China's Economy in the Mid-1970s and Its Development Perspectives." *Acta Oeconomica*, Vol. 14, No. 4, 1975, pp. 355–81.

Presents an overall picture of the Chinese economy from 1949 forward and projections to the year 2000.

15.56 Hobsbawm, E.J. *The Age of Capital, 1848-1875*. New York, Scribner's, 1975. 354 pp.

Examines the extension of European capitalism to the entire world, and the associated rise of the middle classes, liberalism, and political democracy. Discusses the economic boom during the period, winners and losers in the struggle, and social changes.

15.57 Hoch, R. "Choices in Planning for Social Infrastructure and Consumption." *Acta Oeconomica*, Vol. 15, No. 3-4, 1975, pp. 329–41.

Argues that the relative growth rates of infrastructure and consumption must be in harmony. Also points out that development of infrastructure is highly capital intensive, while its operation is labor intensive.

15.58 Hoffman, Joan. *Racial Discrimination and Economic Development*. Lexington, Mass., Heath, 1975. 107 pp.

Analyzes the arguments that racial discrimination can slow the rate of development, and that development does not guarantee a reduction in discrimination. Holds that changes in racial relationships can be achieved more by political power than by market processes.

15.59 Hong, Wontack, and Krueger, Anne O., eds. *Trade and Development in Korea: Proceedings of a Conference Held by the Korea Development Institute*. Seoul, Korea, Korea Development Institute, 1975. 253 pp.

The authors examine factor supply and factor intensity in trade; employment generated by exports; the roles of government and multinational corporations in export growth; and growth rates of productivity for export- and import-substituting industries.

15.60 Kamarck, Andrew M. *The Tropics and Economic Development: A Provocative Inquiry into the Poverty of Nations*. Baltimore, Johns Hopkins University Press, 1976. 113 pp.

Argues that most knowledge of economic development arises from what has taken place in temperate zones and involves their technology and highly trained labor force; and that nearly all tropical countries are poor or less industrialized. Holds that climate is a crucial, but overlooked, force in development.

15.61 Kedourie, Elie, ed. *The Middle Eastern Economy*. Studies in Economics and Economic History. Forest Grove, Ore. International Scholarly Book Services, 1976. 185 pp.

The authors deal with population growth, the emergence of an Egyptian bourgeoisie, recent economic growth in Iran, labor in Turkey, and other topics.

15.62 Kennedy, Kieran A., and Dowling, Brendan R. *Economic Growth in Ireland: The Experience since 1947*. New York, Harper and Row, 1975. 345 pp.

The authors investigate the accelerated rate of growth in Ireland in the 1960's. They examine the behavior of exports, savings, and investment. They also evaluate management and its contribution to changes in the rate of growth, and stress the need for full employment.

15.63 Kennedy, William Paca. *The Economics of Maturity: Aspects of British Economic Development, 1870-1914*. Doctoral dissertation presented to Northwestern University, 1975. 337 pp.

Argues that the British economy did not expand as rapidly as resources and opportunities permitted, and that this reflected wealth holders' desire to avoid losses. Shows that foreign investment consumed resources needed to achieve faster domestic growth. Provides estimates of the degree of retardation. Also investigates the role of the financial system.

15.64 Killick, T. "The Possibilities of Development Planning." *Oxford Economic Papers*, Vol. 28, No. 2, July 1976. pp. 161–84.

Expresses skepticism regarding development planning. Believes that reasons given for its poor performance do not deal with the source of the problem, which is the naivete of the implicit model of government decision-making used.

15.65 Kitamura, Hiroshi. *Choices for the Japanese Economy.* London, The Royal Institute of International Affairs, 1976. 211 pp.

Argues that a "more balanced" growth path is ahead. Examines the causes of Japan's post-war "miracle growth".

15.66 Klingman, David C., and Vedder, Richard K. *Essays in Nineteenth Century Economic History: The Old Northwest.* Athens, Ohio University Press, 1975. 356 pp.

A collection of papers set in a framework of regional growth theory. Individual papers deal with agricultural productivity, net migration, the impact of banking, canal systems, and railroads, and other factors.

15.67 Knauerhase, Ramon. *The Saudi Arabian Economy.* New York, Praeger, 1975. 359 pp.

Analyzes Saudi Arabia's development with numerous references to its negative aspects. Considers the economic prospects of the country's oil policy.

15.68 Kosobud, Richard, and Minami, Ryoshin, eds. *Econometric Studies of Japan.* Urbana, University of Illinois Press, 1977. 512 pp.

Dealing with maintenance of a high growth rate in Japan, the authors address such topics as consumer and investment demand, production and total factor productivity growth, and business cycle stabilization models.

15.69 Kuznets, Paul W. *Economic Growth and Structure in the Republic of Korea.* New Haven, Yale University Press, 1977. 238 pp.

Discusses growth rates, 1953-1972, sectoral shares, and major national accounting aggregates. Examines causes and consequences of accelerated growth. Also deals with labor absorption problems, the contribution of agriculture, and other topics.

15.70 Kuznets, Simon. "Two Centuries of Economic Growth: Reflections on U.S. Experience." Richard T. Ely Lecture. *American Economic Review*, Vol. 67, No. 1, February 1977, pp. 1–14.

Addresses the questions of how the high rates of growth of population and per capita product were attained; and how unity was preserved in the face of divisive sectional interests and differential economic growth.

15.71 Lardy, Nicholas R. *Economic Growth and Distribution in China.* Cambridge, Cambridge University Press, 1978. 244 pp.

Investigates the structure and operation of resource allocation; its influence upon the income distribution; and how resource allocation has been constrained by the equity goals of the leadership.

15.72 Lerner, Abba, and Ben-Shahar, Haim. *The Economics of Efficiency and Growth: Lessons from Israel and the West Bank.* Cambridge, Lippincott, Ballinger, 1975. 187 pp.

The authors discuss the principles of efficiency in production and consumption, the efficiency of the price mechanism, and theoretical limitations. They examine policies based on these principles in the context of Israel's economic development.

15.73 Leontief, Wassily, and others. *The Future of the World Economy.* A United Nations Study. New York, Oxford University Press, 1977. 110 pp.

The authors investigate the relation between economic growth and the availability of natural resources, pollution, and the impact of environmental policies. They present alternative projections, and a multiregional input-output model.

15.74 Lewis, W. Arthur. *Growth and Fluctuations, 1870-1913.* London, Allen & Unwin, 1978. 333 pp.

Analyzes causes of growth in Great Britain, the United States, France, and Germany, and the response of "peripheral" (nonindustrial) economies to growth in "core" countries.

15.75 Li, K.T. *The Experience of Dynamic Economic Growth on Taiwan.* Taipei, Mei Ya, 1976. 528 pp.

Presents papers discussing development and planning, economic cooperation, manpower development and population, and other subjects.

15.76 Lipton, Michael. *Why Poor People Stay Poor: Urban Bias in World Development.* Cambridge, Harvard University Press, 1976. 467 pp.

Examines the conflict of interest between the urban and rural sectors of developing countries. Comments on earnings, capital efficiency, savings, and the skill drain. Argues that the rural sector has not obtained sufficient resources to meet accepted criteria of efficiency and equity.

15.77 Loehr, William, and Powelson, John P., eds. *Economic Development, Poverty, and Income Distribution.* Boulder, Westview Press, 1977. 307 pp.

A collection of papers dealing with problems of income distribution and their relation to economic development; causes of poverty; and policies intended to remedy them.

15.78 Mamalakis, Markos J. *The Growth and Structure of the Chilean Economy: From Independence to Allende.* New Haven, Yale University Press, 1976. 390 pp.

Investigates patterns of production, distribution, and capital formulation. Also examines resource distribution.

15.79 Mass, Nathaniel J., and Forrester, Jay W. "Understanding the Changing Basis for Economic Growth in the United States." In *U.S. Economic Growth from 1976 to 1986: Prospects, Problems, and Patterns.* Vol. 6—*Long-Run Forecasts of Economic Growth.* Studies Prepared for the Use of the Joint Economic Committee, U.S. Congress, Dec. 15, 1976. Washington, U.S. Government Printing Office, pp. 38–75.

The authors discuss their concept of system dynamics methodology as a means of analyzing growth issues; and time horizons for analyzing economic growth. They examine business cycles, long waves, and related topics.

15.80 McCallum, John C.P. *Agriculture and Economic Development in Quebec and Ontario to 1870.* Doctoral dissertation presented to McGill University, 1977. Pp. not indicated.

Examines reasons for the divergence in agricultural productivity between the two provinces. Argues that it was rooted in the market situation arising from the general westward movement of agriculture.

15.81 Martin, Marshall A. *The Modernization of Brazilian Agriculture: An Analysis of Unbalanced Development.* Doctoral dissertation presented to Purdue University, 1976. 523 pp.

Investigates reasons for the contrast between agricultural productivity and high industrial productivity. Also contrasts regional differences in agricultural productivity. Finds research and development and education of the rural population to have been inadequate.

15.82 Marwah, Kanta. "Econometric Explorations in Growth: Partners, Assistance and All That." *Indian Economic Journal*, Vol. 22, No. 3, January-March 1975, pp. 215–38.

Presents an econometric model for Latin America and Asia. Links the growth parameters of these two developing regions to the rest of the world through trade relationships. Determines interactions between growth and foreign assistance.

15.83 McCracken, Paul, and others. *Towards Full Employment and Price Stability.* A Report to the OECD by a Group of Independent Experts. Paris, Organisation for Economic Co-operation and Development, June 1977. 342 pp.

The authors survey the origins of current economic problems and discuss the lessons to be learned. They discuss the desirability and feasibility of economic growth and competing claims on national product. They then examine the aims of policy, in terms of demand management, reconciliation of competing claims, better functioning of markets, and international dimensions.

15.84 Mead, Arthur C. *Economic Growth and Interregional Migration in Non-Metropolitan Regions: The U.S. Experience in the Sixties.* Doctoral dissertation presented to Boston College, 1978. 159 pp.

Examines role of metropolitan areas in the growth of nonmetropolitan areas. Finds the role less than expected. Also discusses the network of interregional personal contacts, which "dominates" the mass media as a source of labor market information.

15.85 Meadows, Dennis L., ed. *Alternatives to Growth—I: A Search for Sustainable Futures.* Cambridge, Lippincott, Ballinger, 1977. 401 pp.

The authors deal with the transition from growth to a "steady-state" society. They consider the relation between population and food or energy; economic alternatives; and the rationale, mechanisms, and implications of various long-term planning proposals.

15.86 Milward, Alan S., and Saul, S.B. *The Development of the Economies of Continental Europe, 1850-1914.* Cambridge, Harvard University Press, 1977. 555 pp.

The authors discuss capital investment, technology, population growth, and the opening of new agricultural land. They conclude that successful economic development was nearly always balanced in the early stages.

15.87 Mishan, E.J. *The Economic Growth Debate: An Assessment.* London, Allen & Unwin, 1977. 277 pp.

Argues that economic analysis is of little use in dealing with the social desirability of continued economic growth. Favors assessing the consequences of technological and economic growth in terms of aspects of the good life.

15.88 Mokyr, Joel. *Industrialization in the Low Countries, 1795—1850.* New Haven and London, Yale University Press, 1976. 295 pp.

Argues that economic conditions at the outset of the modern era and the rate of capital accumulation that transformed a traditional economy into a modern one are linked. Focuses on a few crucial variables, especially income distribution. Argues that the modern sector in low-wage-high-profit economies, such as Belgium, will grow faster than in high-wage economies.

15.89 Morawetz, David. *Twenty-Five years of Economic Development, 1950-1975.* Washington, World Bank, 1977. 125 pp.

Examines whether economic development has failed or succeeded, and investigates the lessons that might be learned. Deals with economic growth and the reduction of poverty in terms of employment, incomes, basic needs, nutrition, and related variables.

15.90 Moulder, Frances J. *Japan, China, and the Modern World Economy: Toward a Reinterpretation of East Asian Development ca. 1600 to ca. 1918.* New York, Cambridge University Press, 1977. 255 pp.

Argues that the rise of industrialism in Japan was due to Japan's autonomous position rather than to inherent characteristics—unlike China, which became incorporated into an imperialist system.

15.91 Myers, John G., and others. "The Impact of OPEC, FEA, EPA, and OSHA on Productivity and Growth." *The Conference Board Record*, April 1976, pp. 61–64.

The authors discuss recent and prospective economic growth trends. They detail the impact of regulatory and pricing changes, especially on costs and technologies.

15.92 Nash, Manning, ed. *Essays on Economic Development and Cultural Change.* In honor of Bert F. Hoselitz. Chicago, University of Chicago Press, 1977. 460 pp.

A collection discussing such themes as urbanization, population policies, modernization, technological factors, economic growth, and the relation of employment policy to development.

15.93 Nelson, J., and Tweeten, L. "Systems Planning of Economic Development in Eastern Oklahoma." *American Journal of Agricultural Economics*, Vol. 57, No. 3, August 1975. pp. 480–89.

The authors develop a model which simulates results of potential public policy strategies aimed at alleviating problems of underdevelopment in rural areas. They present findings on the annual increase in development funds needed to eliminate poverty.

15.94 Nyaw, Mee Kau. *Export Expansion and Industrial Growth in Singapore.* Doctoral dissertation presented to the Simon Fraser University (Canada), 1978. Pp. not indicated.

Examines patterns and structural changes. Assesses the comparative advantage of manufacturing and the allocation of industrial resources, and evaluates strategies. Finds comparative advantage to reside in labor-intensive lines of production.

15.95 Paine, S. "Balanced Development: Maoist Conception and Chinese Practice." *World Development*, Vol. 4, No. 4, April 1976, pp. 277–304.

Examines implications of development strategy for the intersectoral allocation of investment and choice of technologies, as well as its effects on income and employment.

15.96 Panić, M., ed. *The UK and West German Manufacturing Industry, 1954-72: A Comparison of Structure and Performance*. NEDO Monograph No. 5. London, National Economic Development Office, 1976. 151 pp.

Examining growth in output, capital, and labor, the authors find that British industry's deficiencies are attributable to performance, not structure.

15.97 Parikh, A. "Differences in Growth and Kaldor's Laws." *Economica*, Vol. 45, No. 177, February 1978, pp. 83–91.

Challenges the idea that slow industrial productivity growth in England has been related to labor shortages. Shows that the growth rate in manufacturing output has been constrained by the growth rate in exports and investment.

15.98 Park, S.S. *Growth and Development: A Physical Output and Employment Strategy*. New York, St. Martin's Press, 1977. 145 pp.

Discusses the issue of investment choice between agriculture and industry, arguing that maximum agricultural productivity can be attained by investing capital in fertilizer and pesticide rather than by investing directly in agriculture.

15.99 Patrick, Hugh, and Rosovsky, Henry, eds. *Asia's New Giant: How the Japanese Economy Works*. Washington, The Brookings Institution, 1976. 943 pp.

The authors deal with the management of the Japanese economy over the past 20 years. Topics include economic growth and its sources; industrial organization; technology; and labor markets.

15.100 Pauker, Guy J., and others. *Diversity and Development in Southeast Asia: The Coming Decade*. Project/1980, Council on Foreign Relations. New York, McGraw-Hill, 1977. 191 pp.

The authors examine the political pressures likely to impinge on economic development. They also explore the impact of ethnic diversity in preventing the pursuit of economic integration in the area.

15.101 Perosa, Roberto M. *The Industrialization of Brazilian Agriculture: A Study of Agriculture in the Ribeirao Preto and Alta Mogiana Regions*. Doctoral dissertation presented to Cornell University, 1978. 187 pp.

Argues that changes in agricultural labor relationships must be viewed in terms of Brazil's industrialization and urbanization; that mechanization and the introduction of fertilizer were linked with the rise of domestic input manufactures; and that these transformations were brought about by industrial capital.

15.102 Pirages, Dennis Clark, ed. *The Sustainable Society: Implications for Limited Growth*. New York, Praeger, 1977. 342 pp.

The authors deal with the transition from rapid growth to "post-industrial" societies. They discuss energy choices, theories of growth limitations, political and social aspects of limited growth, and other topics.

15.103 Price, Roger. *The Economic Modernisation of France*. New York, Wiley, 1975. 235 pp.

Argues that changes in technical innovations, of which railways were one, contributed more to economic and social development from 1730 to 1880 than did the revolutions of 1789, 1830, and 1848. Also discusses changes in agriculture, and the causes of population growth.

15.104 Reynolds, L.G. "China as a Less Developed Economy." *American Economic Review*, Vol. 65, No. 3, June 1975, pp. 418–28.

Evaluates Chinese strategy regarding such problems as raising the rate of capital accumulation, reducing population growth, providing adequate rural employment, and reducing inequality of income.

15.105 Reynolds, Lloyd G. *Image and Reality in Economic Development*. New Haven, Yale University Press, 1977. 497 pp.

Discusses concepts, economic growth, transfers of technology and capital, and contemporary development patterns.

15.106 Rhazaoui, Ahmed. *Private Foreign Investments and Development in Morocco.* Doctoral dissertation submitted to New York University, 1976. 332 pp.

Reviews the performance of the Moroccan economy in light of planning strategies and foreign investments. Finds a poor growth pattern. Also finds a decline in the relative importance of foreign investment despite official attempts to attract it for export-based growth.

15.107 Robock, Stefan H. *Brazil: A Study in Development Progress.* Lexington, Mass., Heath, 1975. 204 pp.

Analyzes the 1968-74 boom. Discusses the historical and geographical background that helps explains it. Identifies government involvement, abundant natural resources, well-trained technicians, and entrepreneurial talent as chief ingredients that conditioned the boom.

15.108 Rostow, W.W. *The World Economy: History and Prospects.* Austin, University of Texas Press, 1978. 833 pp.

Surveys the past two centuries in terms of the demographic transition, developments in production, trade and price movements, Kondratieff cycles, and stages of growth in 20 countries. Deals with future economic policies required to maintain full employment.

15.109 Ruprecht, Theodore K. *Rapid Population Growth and Macro Economic Development: The Philippines Case.* Bloomington, International Development Research Center, Indiana University, 1975. 256 pp.

Considers the influence of fertility decline on a developing nation's economic improvement. Presents production functions with the usual inputs, plus autonomous factors that permit independent rises in resource productivity over time.

15.110 Ruggles, Richard. "Economic Growth in the Short Run: Its Behavior and Measurement." In *U.S. Economic Growth from 1976 to 1986: Prospects, Problems, and Patterns.* U.S. Congress, Joint Economic Committee, November 10, 1976. Washington, U.S. Government Printing Office, pp. 1–24.

Discusses economic growth since World War II; sectoral saving and capital formation; economic growth and wage and price stability; and other subjects.

15.111 Sanford, Jonathan. "Development Theory and the Multilateral Development Banks: An Assessment of the Effectiveness of Strategies Used in International Development Finance." *The American Journal of Economics and Sociology*, Vol. 34, No. 2, April 1975, pp. 175–95.

Urges multilateral development banks to be more precise in presenting the development theories upon which they base their loans. Assesses the usefulness of the main theories utilized by the banks.

15.112 Sansom, Robert L. *The New American Dream Machine: Toward a Simpler Lifestyle in an Environmental Age.* Garden City, N.Y., Doubleday, Anchor Books, 1976. 251 pp.

Presents a framework for the integration of growth policy, energy policy, and environmental protection. Anticipates a moderation in the U.S. growth rate.

15.113 Selwyn, Percy, ed. *Development Policy in Small Countries.* London, Croom, Helm, in association with the Institute of Development Studies, Susses, 1975. 208 pp.

A collection of conference papers dealing with the constraints faced by small countries in their economic development policies in such areas as trade, monetary policy, aid, and the operation of multinational firms.

15.114 Singer, H.W. *The Strategy of International Development: Essays in the Economics of Backwardness.* White Plains, N.Y., International Arts and Sciences Press, 1975. 248 pp.

Deals with technology, research and development, and employment and poverty in developing countries. Qualifies his earlier confidence in industrialization, and expresses more hope in developing indigenous scientific and technological capacities.

15.115 Singer, Hans W., and Ansari, Javed A. *Rich and Poor Countries.* Baltimore, Johns Hopkins University Press, 1977. 228 pp.

The authors argue that the income gap between rich and poor countries is the most critical problem facing the world economy. They discuss the relation between trade and development, trade policies, aid as an agent of development, and international factor movements.

15.116 Stewart, F., and Streeten, P. "New Strategies for Development: Poverty, Income Distribution, and Growth." *Oxford Economic Papers*, Vol. 28, No. 3, November 1976, pp. 381–405.

The authors discuss variations in redistributive strategies as alternatives to growth strategies.

15.117 Strassmann, Paul W. "Development Economics from a Chicago Perspective." *Journal of Economic Issues*, Vol. X, No. 1, March 1976, pp. 63–80.

Critically reviews the contributions of outstanding Chicago school economists, including Jacob Viner, Harry G. Johnson, Milton Friedman, and Theodore Schultz. Contrasts their ideas with those of Marxist and "mainstream" development economists.

15.118 Temin, Peter. *Causal Factors in American Economic Growth in the Nineteenth Century.* London, Humanities Press, Atlantic Highlands, N.J., 1975. 79 pp.

Examines recent literature pertaining to growth in the 19th century. Focuses on the effects of abundant land, technological change, and railroads. Also discusses slavery and the banking system.

15.119 Terleckyj, Nestor. "Economic Growth and the Quality of Life: Some Past Trends and Implications for the Future." In *U.S. Economic Growth from 1976 to 1986: Prospects, Problems, and Patterns.* Vol. 10—*The Quality of Economic Growth.* Studies Prepared for the Use of the Joint Economic Committee, U.S. Congress, May 20, 1977. Washington, U.S. Government Printing Office, pp. 25–41.

Explores the correspondence between patterns of growth and patterns of change in series of economic and noneconomic indicators of wellbeing, such as life expectancy, crime, educational attainment, and adequacy of housing. Also measures changes in the quality of life.

15.120 Thurow, Lester C. "The Implications of Zero Economic Growth." In *U.S. Economic Growth from 1976 to 1986: Prospects, Problems, and Patterns.* Vol. 5—*The Steady-State Economy.* Studies Prepared for the Use of the Joint Economic Committee, U.S. Congress, December 2, 1976. Washington, U.S. Government Printing Office, pp. 40–50.

Discusses the impact of zero growth upon the distribution of economic resources and upon government. Also examines international influences and the problem of inequality.

15.121 Thurow, Lester C. "The Implications of Zero Economic Growth." *Challenge*, May/June 1977, pp. 36–43.

Discusses consequences of zero growth in terms of unemployment, distribution of income, patterns of employment, industry sectors, and environmental pollution.

15.122 Tyler, William G. *Manufactured Export Expansion and Industrialization in Brazil.* Kieler Studien No. 134. Tübingen, J.C.B. Mohr (Paul Siebeck), 1976. 373 pp.

Argues that industrialization became increasingly efficient and rising exports enhanced product quality and led to greater economies of scale.

15.123 U.S. Congress, Joint Economic Committee. *U.S. Long-Term Economic Growth Prospects: Entering a New Era.* January 25, 1978. Washington, U.S. Government Printing Office, 125 pp.

A staff study summarizing findings from 12 volumes of studies pertaining to special forces affecting growth; human resources; capital formation; natural resources; productivity and technological change; and international factors. (Selected studies are entered in this bibliography under their authors' name.)

15.124 U.S. Congress, Joint Economic Committee. *Long-Range Economic Growth.* Hearings, October 23 and 24, 1975. Washington, U.S. Government Printing Office, 223 pp.

Presents testimony and statements by Senators, businessmen, and academicians.

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15.127 Weinstein, Bernard L., and Firestine, Robert E. *Regional Growth and Decline in the United States: The Rise of the Sunbelt and the Decline of the Northeast*. New York, Praeger, 1978. 151 pp.

The authors examine the causes and consequences of differential regional growth and decline. They deal with public-sector implications, industrial location and development, and historical and theoretical perspectives.

15.128 Wells, Donald A. *Saudi Arabian Development Strategy*. Washington, American Enterprise Institute for Public Policy Research, 1976. 80 pp.

Examines development plans calling for increasing labor productivity through manpower programs, economic diversification, and regional distribution. Critically reviews these plans. Concludes in part that the country's dependence on international trade and finance will not decrease.

15.129 *The White House Conference on Balanced National Growth and Economic Development.* Final Report. Vol. 1. *Summary of Conference Proceedings,* July 1978. Vol. 2. *Workshop Reports,* July 1978. Plus six appendix volumes. Washington, U.S. Government Printing Office, 1978.

Presents summaries, conference proceedings, submissions, and background materials bearing on growth policy and processes; urban policy; fiscal problems of local government; economic development initiatives; employment policies; Federal regulations; regional policies; and other issues of national import.

15.130 Wilczynski, Jozef. "Development Strategies and the Quality of Production under Socialist Economic Planning." *Bangladesh Development Studies*, Vol. 3, No. 2, April 1975, pp. 127–52.

Associates quality of production with the stages of economic development. Argues that quantity may be favored over quality in the lower stages of development under any economic system. Believes that expansion may last longer under socialism than is justifiable and may thereby impede economic development and technological progress.

15.131 World Bank. *World Development Report, 1978*. Washington. 120 pp.

First of a series, the report discusses the sustaining of rapid economic development, raising productivity and the income of the poor, improving their access to public services, and maintaining an international environment conducive to development. Projects that growth will be slower in the coming decade than earlier.

15.132 Wright, Alison. *The Spanish Economy, 1959-1976*. New York, Holmes & Meier, 1977. 195 pp.

Examines the structure and sources of growth of Spain's agricultural and industrial sectors.

15.133 Xiarchos, Stavros. *Growth Centers and Their Spheres of Influence*. Doctoral dissertation presented to The Pennsylvania State University, 1976. 201 pp.

Investigates the "growth pole" and related literature. Argues the need for regional policy to alleviate regional inequities. Discusses empirical studies of the effects of growth centers and formulates a model to test the effect of growth centers.

15.134 Zavareei, Hassan A. *Dependent Industrialization in Brazil*. Doctoral dissertation presented to the New School for Social Research, 1977. 354 pp.

Demonstrates that substantial economic growth has occurred under the aegis of international finance capital in Brazil. Examines the limitations of such growth, as well as the determining variables.

Bibliographies, annual reports, etc.

16.1 *Annual Review of Information Science and Technology.* White Plains, N.Y., Knowledge Industry Publications.

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16.5 Cain, Glen G. "The Challenge of Segmented Labor Market Theories to Orthodox Theory: A Survey." *Journal of Economic Literature,* Vol. 14, No. 4, December 1976, pp. 1248–57.

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16.6 Devens, Richard M. "Labor Force Trends: A Bibliography." *Monthly Labor Review,* Vol. 100, No. 10, October 1977, pp. 12–15.

Presents an annotated bibliography covering issues discussed in an accompanying article (pp. 3–12).

16.7 Dworaczek, Marian. *Job Satisfaction: A Selected Bibliography.* Ontario Ministry of Labour, Research Library, May 1976. 38 pp.

16.8 Forest, Lawrence R., Jr. *Federal Reserve Measures of Capacity and Capacity Utilization.* Washington, Board of Governors of the Federal Reserve System, February 1978. 40 pp.

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16.9 Von Furstenberg, George M., and Malkiel, Burton G. "The Government and Capital Formulation: A Survey of Recent Issues." *Journal of Economic Literature,* Vol. 15, No. 3, September 1977, pp. 866–78.

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Biennial compilation, approached through the social sciences and interdisciplinary studies. Includes 450 entries, arranged by institution and department where project is undertaken.

16.12 Hawk, Donald L., and Dunham, Randall, B. *The Four Day/Forty Hour Workweek.* A Selected Bibliography. Monticello, Ill., Council of Planning Librarians, 1977. 43 pp.

16.13 Kahne, Hilda, with Kohen, Andrew I. "Economic Perspectives on the Roles of Women in the American Economy." *Journal of Economic Literature,* Vol. 13, No. 4, December 1975, pp. 1279–92.

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16.14 "Productivity in the Public Sector. An Annotated Bibliography." *Public Productivity Review,* Vol. 1, No. 4. Whole issue.

Covers measurement, management, labor relations, training and development, budget and finance, and functional areas.

16.15 *Public Productivity Review: A Policy and Management Periodical.* Published quarterly by the Center for Productive Public Management, John Jay College of Criminal Justice, New York, N.Y.

Presents analyses of productivity theories and concepts, emphasizing those which are pertinent to labor-management relations, human capital efficiency and effectiveness, and organizational and system goals. Also presents productivity bibliographies and citations.

16.16 *Survey of Current Business.* A monthly publication of the U.S. Department of Commerce.

Includes quarterly surveys of plant and equipment expenditures, as well as periodic discussions of capital and other expenditures for pollution abatement.

16.17 Sweetland, John. *Highlights of the Literature—Managerial Productivity.* Scarsdale, N.Y., Work in America Institute, 1978. 40 pp.

Presents a review of the literature and an annotated bibliography of articles concerned with the measurement, prediction, and development of productivity among managers. Explores the usefulness of management development, management by objective, and behavior modification programs.

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Covers productivity, strategies for improving productivity, job satisfaction, motivation, and organization of work.

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Monthly publication featuring household data on the labor force, total employment, and unemployment; jobseeking methods used by the unemployed; establishment data on employment, hours, earnings, and turnover; output per hour, hourly compensation, and unit labor costs; insured unemployment; and special articles reviewing data on pertinent subjects.

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Presents time series on all published BLS statistics, as well as explanatory notes covering the statistics.

16.23 U.S. Department of Labor, Bureau of Labor Statistics. *Major Programs 1978.* Report 521. Washington, 58 pp.

Outlines current programs, including those pertaining to productivity and technology.

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Regularly publishes original articles on concepts, trends, and the sources of productivity change, as well as on construction labor requirements and related subjects. Also lists new publications on productivity each month.

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16.26 U.S. Department of Labor. Employment and Training Administration, *Research and Development Projects.* 1977 Edition. Washington, 294 pp.

Lists projects concerning program planning and administration, programs and techniques, the labor market, economic and social policies, dissertation and small-grant research, and foreign trade and investment abroad.

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Discusses U.S. productivity performance. Summarizes data on the productivity of internal operations of the Federal Government. Reviews Federal expenditures to stimulate productivity in nonfederal sectors of the economy.

16.28 U.S. National Center for Productivity and Quality of Working Life. *Annual Report to the President and Congress*. Washington, U.S. Government Printing Office, 1977. 127 pp.

Describes the activities of the Center, including attempts to improve productivity through cooperative arrangements in mineral, food distribution, construction, apparel, and airline industries. Describes the productivity improvement programs within Federal agencies, and Federal programs that aim to improve productivity in the nonfederal public and private sectors.

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Summarizes the Center's activities during its existence.

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Lists centers, publications and newsletters, and bibliographies dealing with productivity and worklife information; also lists various information resources for productivity research.

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Contains summaries of reports completed in 1978, as well as of assessment activities.

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Covers new trends, experiments, and developments in the workplace, focusing on efforts to improve performance and productivity. Also analyzes current experience, contemporary issues, and new ideas.

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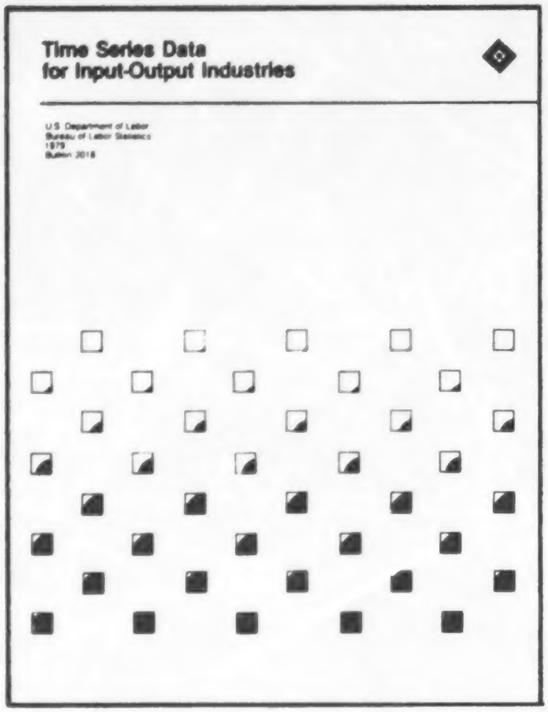

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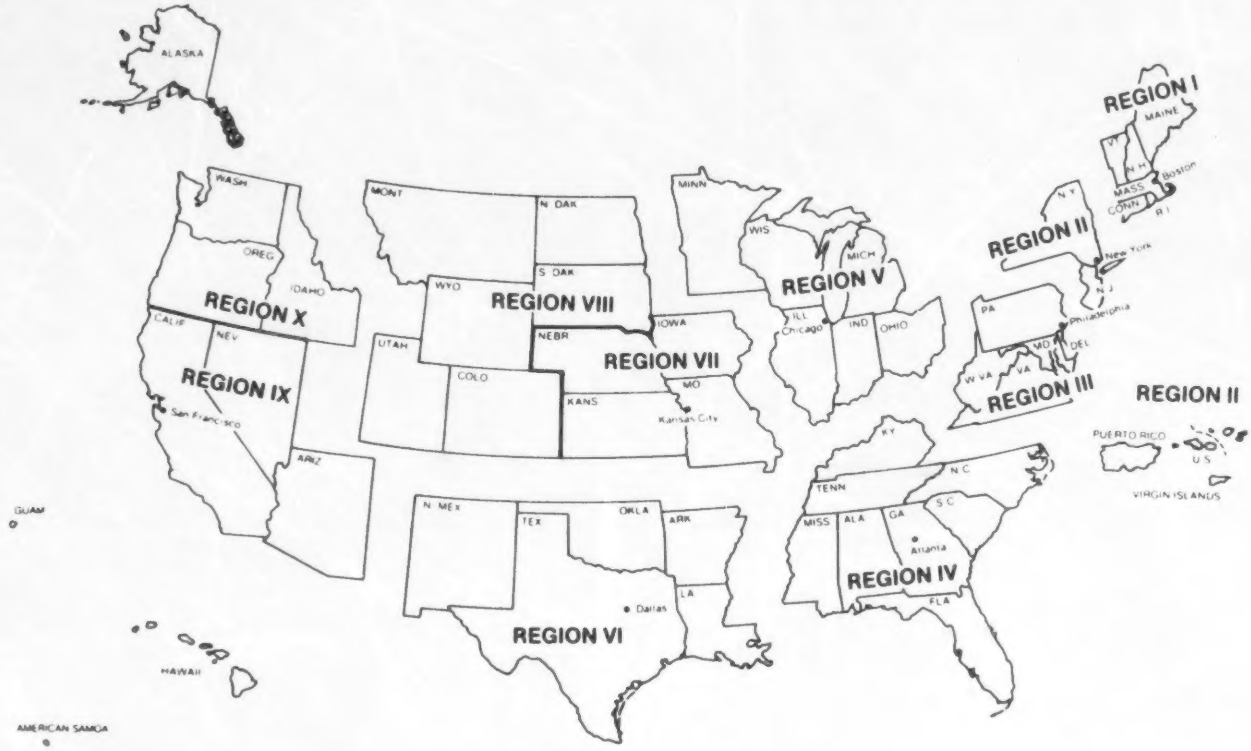
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